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1. Beckman, H.: Treatment in General Practice. Philadelphia, Saunders, 5th ed., 1946, 784-785.
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*DIAGNOSIS OF POLIOMYELITIS

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INTRODUCTION

The prime purose of this paper is to discuss the diagnosis of poliomyelitis in patients admitted to the Colorado General Hospital during the epidemic of 1946. Three hundred and thirty-nine patients were admitted with a tentative diagnosis of poliomyelitis which was confimed in 303.

*Selection of Patients*s In 1946, 900 cases were reported to the Colorado State Department of Public Health, (1) the first case having been reported in February. The date of the first admission to Colorado General Hospital was June 26th, aproximately one month after the epidemic had been recognized. Until mid-July the majority of patients admitted were adults, but thereafter added facilities permitted admission of patients regardless of age. The more severely ill patients from the outlying Colorado communities were given preference.

*General Characteristics*s Poliomyelitis is a viral infection, epidemics of which occur during the warm months. Sporadic cases may occur throughout the year. The majority of evidence supports the theory of spread by direct contact with individuals harboring the virus. Involved in particular are the anterior horn cells of the spinal cord and motor nuclei of the brain. In addition, careful sectioning of autopsy specimens (2 a&b) in man shows involvement of the precentral gyrus of the motor cortex and severe lesions of the reticular formation of the medulla. Frequently involved are :(1) the red nucleus; (2) substantia nigra; (3) olivary nucleus; (4) roof nuclei of the cerebellum; (5) vestibular nuclei; (6) internuncial neurones of spinal cord and (7) the propioceptive cells of the posterior ganglia.

TABLE I
POLIOMYELITIS
Colorado General Hospital Patients—303
Clinical Types

1. "Abortive"	
2. Non-paralytic	14%
3. Encephalitic	
4. Paralytic	
a. Spinal	53%
b. Bulbar	7%
c. Bulbospinal	25%
e. Encephalospinal	1%
e. Encephalobulbospinal	

The clinical classification given in Table I may be conveniently used. The term "abortive" denotes those cases which show mild systemic symptoms, are difficult to diagnose and are suspected only during epidemics. The incidence of this type is difficult to determine. In a study (3) of three separate communities without selection of the family from an original case, the average ratio of frank to "abortive" cases was found to be approximately one to five. The *non-paralytic type* includes those cases which are characterizedby meningeal signs, e.g., stiff neck and back and positive Kernigs, without clinical paralysis. *Clinical paralysis* is stressed because autopsy studies on primates challenged with human polio virus have shown that approximately 30 per cent of motor neurons can be "destroyed, necrotic or chromatolysed" without apparent paralysis (4). In any single epidemic approximately 50 per cent of frank cases are of the non-paralytic variety (5). The *paralytic type* includes those cases in which paralysis is evi-

*Aided by a Grant from the National Foundation for Infantile Paralysis.

dent and is subdivided on the basis of sites involved, e.g., spinal, bulbar, bulbo-spinal, encephalospinal and encephalobulbospinal.

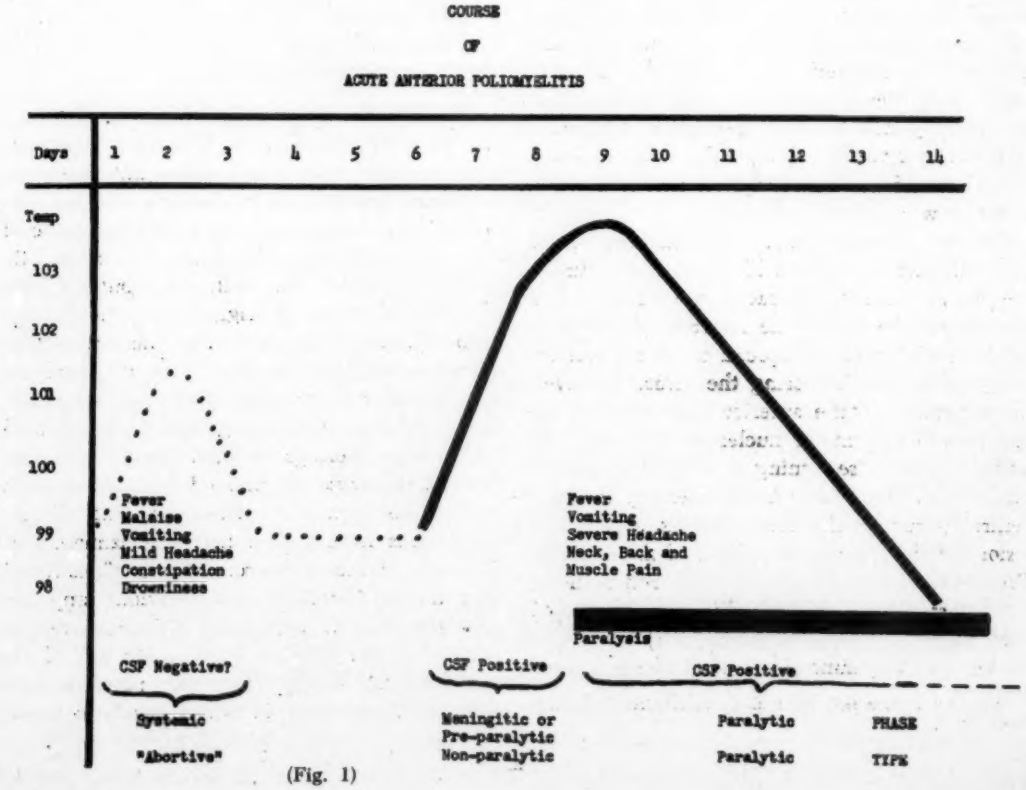
Of 303 patients admitted to Colorado General Hospital, there were 42 non-paralytic cases (14 per cent); 162 spinal cases (53 per cent); 21 bulbar case (seven per cent); 75 bulbo-spinal cases (25 per cent) and three encephalospinal cases (one per cent). No "abortives" were hospitalized. These hospitalized cases included a high percentage of bulbar and severely involved patients, because limited facilities for care prevented admission of non-paralytic cases. Although encephalitic varieties are included in the classification of types of poliomyelitis, only three patients could be so classified with any degree of certainty.

Poliomyelitis is a disease which seems to affect all age groups from the newborn to the elderly. Fronig (6) reports onset of symptoms in a four-day old infant and the writer has observed three patients in the seventh decade of life. In recent epidemics centered about large American cities the highest attack rate of recognized disease is in children under 15 years of age with the greatest incidence occurring in the five-through nine-year age group (7). In spite of the previously mentioned selection of our cases, the highest incidence in this series still occurred in the five-to nine-year old children.

DIAGNOSIS

The clinical picture of poliomyelitis is extreme variable. Paralysis or weakness is characteristically spotty. The clinical course, as represented in Fig. I, may be divided into three phases, e.g., *systemic* (symptoms of the "abortive case") *meningitic* or *pre-paralytic* and the *paralytic*. On the basis of previous studies (3, 8) one can expect that approximately 80 to 95 per cent of cases will not progress beyond the systemic phase and of the remaining individuals, about one-half will not develop clinical paralysis.

In a study (9) of 60 children who had intimate contact with cases of frank poliomyelitis and who had virus in the stool and/or elevated spinal fluid protein, symptoms of the "abortive" type of poliomyelitis were mild fever, headache, vomiting, constipation and drowsiness. Physical findings in this form of the disease are lacking



(Fig. 1)

or minimal and consist of mild fever (99°-101°) and lethargy. Without virus studies such cases cannot be definitely diagnosed as poliomyelitis and are usually considered as suspects only during epidemics.

On careful questioning of patients with frank poliomyelitis one is likely to find that the majority have had prodromal symptoms (as those of the "abortive" case) several days before. Although symptoms of the systemic phase or the "abortive" type of disease are non-specific, evidence that the virus may be present in the central nervous system is suggested from studies by Andelman et al (10) and Bodian (11). In a group of contact children suspected of convalescing from sub-clinical poliomyelitis, 79 per cent of cases had spinal protein levels over 45 mg per cent, averaging 55 mg per cent, 11-45 days after onset of disease. (10) Should spinal punctures be done routinely during the period of acute symptoms on the "abortive" case, or prodromal period on the frank case, an increase in cells or elevation of protein level might be found. Although no studies are known in which the virus has been isolated from the central nervous system of "abortive" cases, in monkeys. Bodian (11) estimated that central nervous system lesions due to the virus appeared a day or less before onset of pre-paralytic symptoms. Characteristically in cases of frank disease, the systemic phase lasts one to three days and the patient is then symptomless for one to seven days. Accumulating evidence suggests that stress may be a determinant factor in the eventual course of the disease. In a series of 521 patients Top and Vaughan (12) found the incidence of stress or illness within 4 to 14 days of onset to be 35 per cent of patients who died, 20 per cent of all cases and 5 per cent of 497 case controls. A study by Russel (13) indicated a high incidence of severely paralytic disease in those patients who underwent undue stress a few days before or after onset of definite symptoms. In a study of 411 poliomyelitis patients from three epidemics, Horstmann observed that the degree of physical activity performed during the pre-paralytic phase "was associated with a significant increase in the incidence and severity of subsequent paralysis. Correspondingly, a significantly higher percentage of non-paralytic than paralytic patients gave a history of bed rest or minimal activity during the stages of the major illness" (14). A similar correlation has been found in the chimpanzee by Levinson et al. (15) In a series of 261 patients admitted to Colorado General Hospital, 110 (42 per cent) gave a history of stress or injury, which they considered unusual, occurring within two weeks before onset. This study was not controlled and no attempt was made to correlate the severity of stress with degree of paralysis.

The *meningitic* or *pre-paralytic phase* is characterized by symptoms of frank disease, e.g., fever (99°-104°), severe headache, painful muscles in neck, back and legs, malaise and vomiting. In fairly large numbers of patients the disease will begin with symptoms of this phase.

Symptoms of the *paralytic phase,* to which approximately 50 per cent of cases progress in two to four days, are those of the pre-paralytic patient plus varied muscle paresis or paralysis. Temperature in the uncomplicated case returns to normal in two to seven days. Usually the maximal degree of paralysis will have developed by the time the temperature is normal, but an increase has been observed to occur after the febrile period in the third week in a rare case. Also a rare patient, infant or small child, may manifest nothing until onset of paralysis.

The wide range and incidence of individual symptoms of poliomyelitis can be appreciated from Tables II and III based on histories of 299 patients. The actual incidence of symptoms may be higher than represented because historical facts were sometimes incomplete. The most common symptoms were fever, headache, anorexia, nausea, vomiting and pain in the neck, back and legs.

Although only 18 per cent of the patients complained of constipation before entry, this symptom was almost invariably a problem on the ward. Two per cent of patients had mild diarrhea before admission. The incidence of sore throat was 17 per cent and this symptom occurred two and one-half times more frequently in the bulbar than in the spinal or non-paralytic case. Pohl (16) reports that in the Minnesota Epidemic of 1946 sore throat occurred ten times more often in the bulbar than in other cases. Abdominal pain, often associated with tenderness and muscle spasm, was a complaint in 11 per cent of patients. Urinary retention seemed to occur more frequently in young males with extensive involvement of the lower extremities. Cough (unassociated with bulbar or respiratory type of disease) and coryza were uncommon

manifestations. The symptoms of convulsions, unassociated with hypoxia, occurred very rarely. Shaking chills (five per cent) or chilliness (three per cent), common manifestations of acute infections, are relatively infrequent in this disease. Paresthesia, usually described as "numbness," occurred in four per cent of patients, but on gross sensory testing, true hypaesthesia was not observed by us. Another relatively rare symptom was hyperaesthesia (three pr cent).

TABLE II

POLIOMYELITIS, COLORADO GENERAL HOSPITAL, 1946

Common Symptomatology

Fever	91%	Mental confusion	5%
Headache	64%	Pain in neck	47%
Anorexia	56%	Pain in back	46%
Nausea	50%	Pain in legs	30%
Vomiting	39%	Muscular aches and pains	15%
Constipation	18%	Abdominal pain	11%
Diarrhea	2%	Urinary retention	9%
Sore throat	17%	Chills (shaking)	5%
Coryza	2%	Chilliness	3%
Cough	1%	Paresthesias	4%
Drowsiness	14%	Hyperesthesia	3%
Malaise	12%	Tremors	2%
Fatigue	8%	Muscular twitching	1%
Irritability	6%		

TABLE III

POLIOMYELITIS, COLORADO GENERAL HOSPITL, 1946

Bulbar Symptoms

Dysphagia	19%
Nasal speech	14%
Aphonia	1%
Weakness of voice	1%
Hoarseness	1%
Diplopia	4%
Blurring of vision	1%

TABLE IV

POLIOMYELITIS, COLORADO GENERAL HOSPITL, 1946

Cardinal Physical Signs

Stiffness of neck	94%
Hamstring tightness	87%
Weakness or paralysis	85%
Stiffness of back	83%

The *cardinal physical signs* (Table IV) are stiffness of neck, hamstring "spasm" or tightness, weakness or paralysis and stiffness of the back. Muscle "spasm" or tightness, in which the muscle belly becomes firmer and shortened, with increased prominence of its tendons (and early in association with pain and tenderness) may occur in any muscle group. Most frequently the posterior groups in the neck, back and legs are involved and, less commonly, the lateral muscles of the thigh, quadratus lumborum, pectoralis major, brachial biceps, sternocleidomastoids and intrinsic muscle of the hands and feet. Descriptive terms presumably due to a combination of muscle "spasm" and meningeal irritation, and frequently used in the diagnosis of poliomyelitis, are "head drop", "poker back" and "tripod position". The latter is used to described the posture which the patient assumes on attempting to sit up, with knees flexed, "poker back" and hands placed behind him for support.

Paralysis, when present, is flaccid, although in a rare patient, true spasticity, associated with pathological reflexes, may be observed. Any somatic muscle in the body may be weakened or paralyzed and the distribution of involvement is spotty. Weakness or paralysis occurs more frequently in the extremities than in the trunk and, in the former, the anterior tibalis, dorsiflexors of the foot, deltoid, triceps and opponens muscles in the hand are very commonly affected. Decreased or absent deep reflexes are associated with the flaccid paralysis, but not infrequently one may find hyperreflexia at the height of the pre-paralytic phase.

Special emphasis is placed on the *bulbar-respiratory group* of cases because it is within this group that the risk of death is greatest and accurate diagnosis of the specific type of disease is of paramount importance. In this paper the term bulbar is used broadly and includes all cranial nerves as well as medullary centers. The percentage distribution of these types of patients varies considerably from one epidemic to another. Of the 303 patients admitted to Colorado General Hospital, 96 or 32 per cent had some form of the bulbar type of disease and 55 or 18 per cent had transient or permanent respiratory paralysis. The symptoms and signs of the bulbar type of poliomyelitis depend upon the site and extent of individual cranial nuclear destruction. Lesions in the nuclei of cranial nerves III, IV and VI lead to disturbance in accommodation, diplopia, blurring of vision, ocular palsy and pupillary stasis; in the nucleus of the third division of V, to difficulty in mastication; in the nucleus of VII, to facial palsy; in the nucleus of XII, to

disturbed mastication and deviation of the tongue; in the nucleus ambiguous (IX, X and XI), to nasal speech, regurgitation of food via the nose, dysphagia, deviation of the uvula, absent gag reflex, pooling of salivary secretions, hoarseness, stridor, aphonia and the finding of vocal cord paralysis or "spasm". According to Baker et at (17 a, b), the outstanding clinical manifestations of respiratory center involvement were irregular and shallow respirations, mild to moderate tachycardia, hypertension; and the outstanding manifestations of circulatory center involvement were marked tachycardia, low pulse pressure, weak pulse and cherry-red color of the skin. Hyperthermia and marked sweating may be present.

The incidence of individual cranial nerve lesions as it occurred in 96 patients with bulbar poliomyelitis in the Colorado General Hospital series is given in Table V. Many of the patients had multiple lesions and 82 or 85 per cent, clinically, had involvement in the nucleus ambiguous (motor nerves IX, X and cranial division of the XI which are difficult to differentiate individually). Three patients had laryngeal signs and symptoms (cranial nerve X) without paralysis of soft palate or pharyngeal muscles. Two patients with paralysis of the muscles of mastication, one of whom has had residual weakness for at least two years, were particularly interesting.

Paralysis of the respiratory muscles, e.g., diaphragm and intercostals, due to lesions in the lower motor nuclei of the cervical and thoracic cord, leads to dyspnea, inability to cough and signs and symptoms of hypoxia unless artificial respiration is administered. Occasionally, one may observe decreased expansion and splinting of the chest wall apparently due to "spasm" of the intercostals and, sometimes, of the pectoralis major and latissimus dorsi. In the author's experience, hot moist packs about the chest may help relieve such symptoms and, on several occasions, appeared to forestall the use of the respirator. Whether or not "spasm" of the diaphragm occurs is speculative. Signs of paralysis of the diaphragm are an immobile, scaphoid abdomen and, excluding glottic and abdominal muscle paralysis, the inability to cough. In the event of intercostal paralysis and an intact diaphragm, on inspiration one may observe immobility or even compression of the rib cage associated with increased abdominal excursion. Loss of abdominal muscle power may further intensify the latter symptom, as well as cause inability to cough (18).

Patients with respiratory muscle paralysis may have, in addition, involvement of any cranial nerve nucleus and/or the respiratory circulatory center, e.g., the bulbar-respiratory form. These constitute the most serious types of cases. Of considerable concern are those patients who have pharyngeal and laryngeal paralysis with dysphagia, pooling of salivary secretions in the oropharynx, aphonia and loss of the cough reflex. In the presence of respiratory paralysis the threat of aspiration, atelectasis, pneumonia and pulmonary edema is intensified whether the patient continues on his own with partially functioning respiratory muscles, or receives respiratory aid artificially. The combination of cervicothoracic and respiratory or circulatory center lesions may exist and the chances of survival of such a patient are slim.

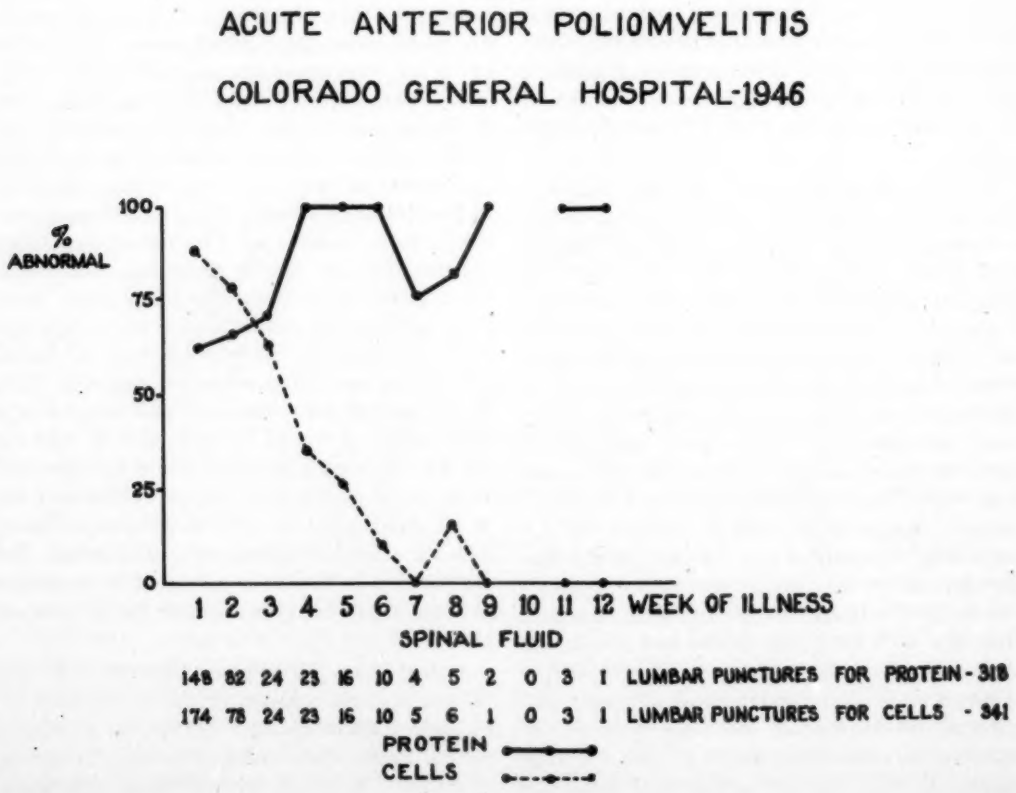
The outstanding clinical signs and symptoms of the encephalitic type of poliomyelitis, which occur relatively rarely and are difficult to differentiate from hypoxia, are drowsiness, anxiety, mental confusion, hyperexcitability and convulsive phenomena. As pointed out by Baker et at (17 a, b), because of the marked similarity between the manifestations of the encephalitic type of disease and hypoxia which is commonly seen in the bulbar forms, the latter should be ruled out before the diagnosis of encephalitis is made. In the Colorado General Hospital group, a relatively large number of the bulbar-respiratory patients had the above symptoms, but causes for hypoxia were known to be present. Only three patients, all children, were eventually labelled as having the encephalitic type of disease and all had associated muscular weakness. Thus in any patient with the signs and symptoms of encephalitis, it would be wise first to rule out the factors causing hypoxia, and if no associated weakness or paralysis is present, to consider seriously other types of virus encephalitides before making a final diagnosis of poliomyelitis. Unfortunately, in the latter group of cases, results of serial antibody studies are not likely to be obtained for two months or more.

Laboratory procedures, exclusive of virus studies and examination of the spinal fluid, are of little diagnostic value except in a negative sense. Total white blood cells may be normal, or elevated to 20,000 with a normal differential,

or pronounced predominance of polymorphonuclear leucocytes. Sedimentation rate is normal in uncomplicated cases. To date, a reliable skin sensitivity test has not been devised. Facilities for virus studies can be made available only for special investigation.

The spinal fluid findings, although not diagnostic, can be of considerable assistance. Changes occur in the cells and protein levels only. However, it is believed advisable to do routine cultures and sugar determinations on all patients suspected of poliomyelitis because of the ease with which this disease may be confused with early pyogenic or tuberculous meningitis. In the majority of patients the cell count is elevated during the acute phase with a decline in the early weeks of the disease. An increasing protein level reaches its maximum after this period. Fig. II shows the percentage of abnormal recordings on 283 patients who had lumbar punctures. The cell count was considered normal if it did not exceed 10 lymphocytes and if no polymorphonuclear leucocytes were present ;a protein level, normal, if it was below 45 mg per cent. Note the following points: (1) the high percentage of patients with abnormal cells in the first week (88 per cent) with a rapid decline by six weeks; (2) the relatively smaller number with abnormally high levels of protein in the first week (62 per cent) with a rise to include 100 percent of all patients with spinal punctures done in the fourth, fith and sixth weeks. In the 11th and 12th weeks of disease, in all four patients on whom determinations were done, the protein level was still elevated. However, after the fourth week, the number of determinations were relatively small. Thus, we are inclined to believe that if spinal punctures are done early in the second month of disease, abnormality of protein levels may be found. In a study by Peabody, Draper and Dochez (19) spinal fluid protein levels were found highest in the third week with a trend toward normal in the fourth week of the disease.

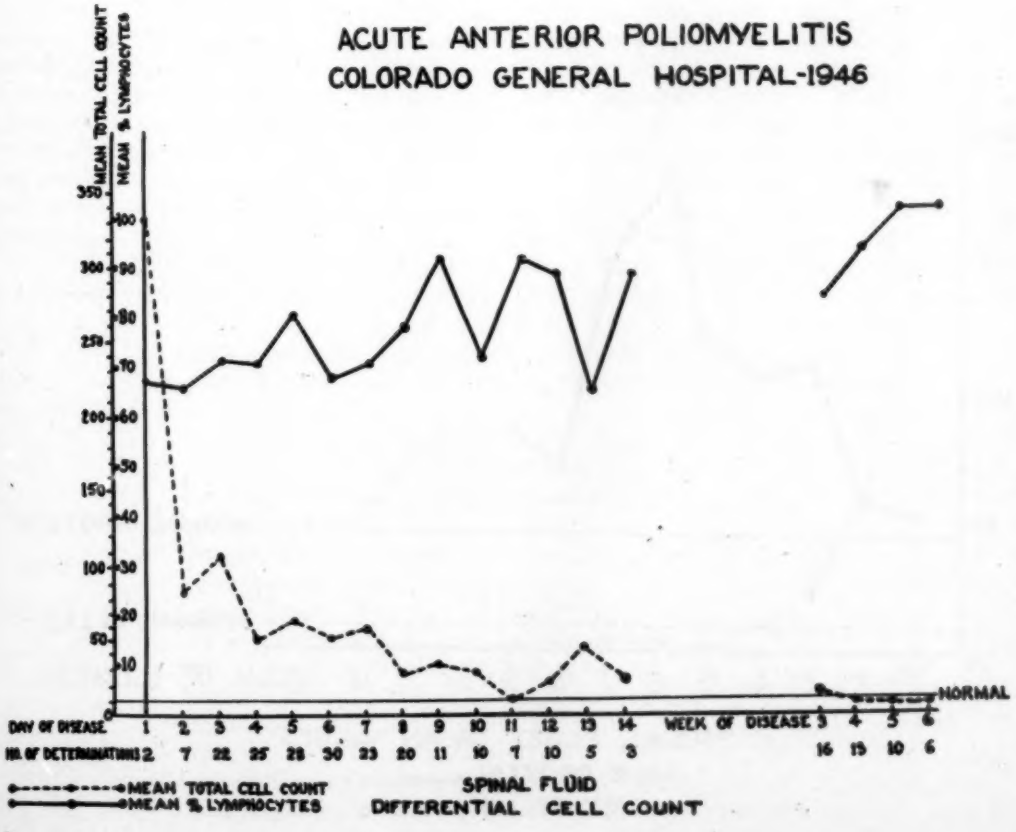
(Fig. 2)



As represented in Fig. III, a predominance of lymphocytes with *mean* percentage values between 63 to 100 per cent on a total of 248 determinations was found during the first six weeks of disease. Contrary to the general concept that polymorphonuclear leucocytes predominate during the first few days, mean values for lymphocytes of 66 to 71 per cent were observed in the first three days and 66 to 80 per cent in the first week of disease. Not until the period of the fifth and sixth week when normal total counts were found did the percentage of lymphocytes reach 100 per cent. When a relatively small number of cells were present, the majority of differential counts were done by the chamber method, and it should be emphasized that in differentiating granulocytes and lymphocytes by this method, errors can easily occur. However, in the first week of disease in 13 of 137 determinations and in the second week in 14 of 66 determinations, polymorphonuclear leucocytes were over 50 per cent of the total number of cells.

The peaks of the spinal fluid cell count and protein level to be expected are demonstrated in Fig. IV in which mean values on 341 determinations of the cell count and 318 determinations of the protein level are recorded. The highest cell counts occurred in the first week and highest protein levels occurred in the sixth week of the disease. However, a great range of variation in both the spinal fluid cell count and protein levels can be expected and this fact should be considered before reaching a diagnosis on any individual case. In the above series of patients, cell counts ranged from zero to 1700 per cm. and protein levels from 10 to 600 mg. per cent. A question which frequently arises is: Can a diagnosis of poliomyelitis be made in the presence of a normal spinal fluid? In our experience, such may be true during the *first three weeks* of the disease in which period the spinal puncture is most likely to be done. In the Colorado General Hospital's series of 283 patients on whom this procedure was done during this period, 21

(Fig. 3)

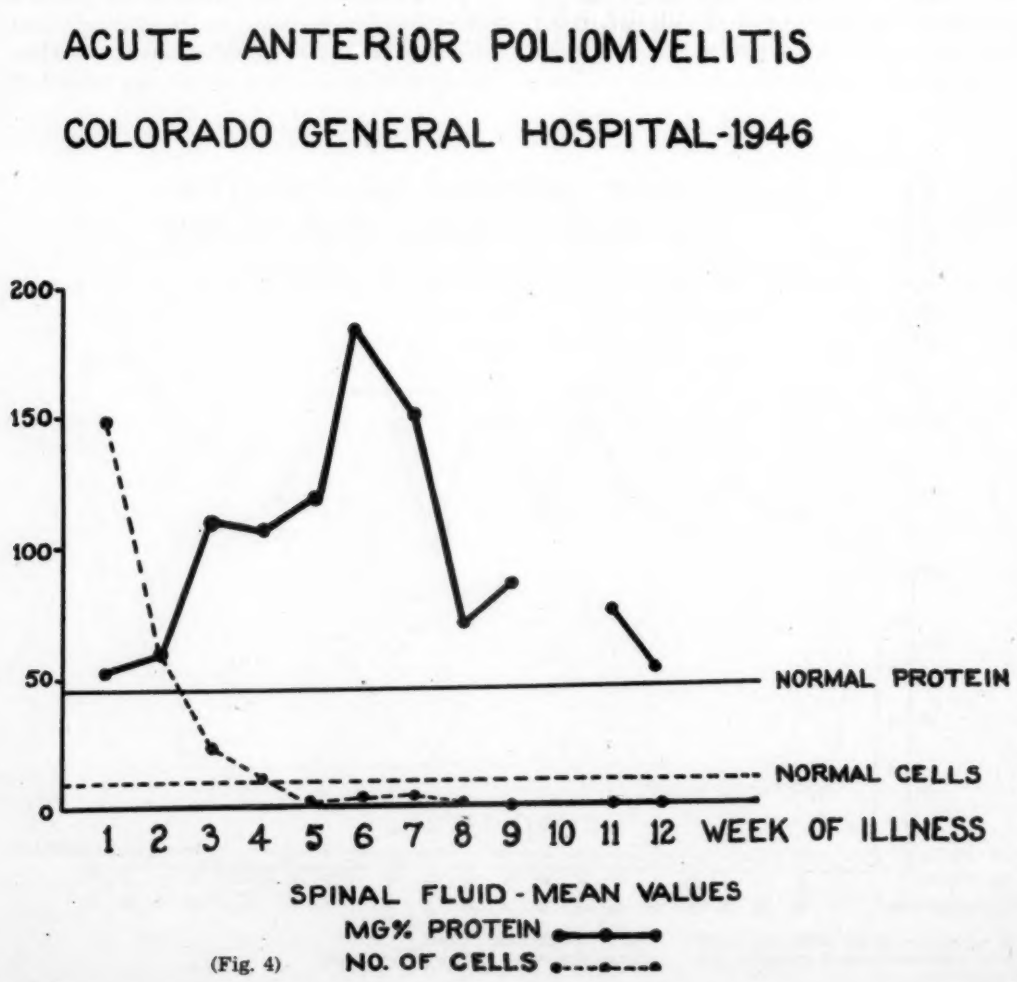


or seven per cent had normal spinal fluid findings. In these particular patients repeat lumber punctures were not done after the third week of disease.

DIAGNOSTIC ERRORS

Errors in diagnosing poliomyelitis when it is not present have been unusually high, apparently due to the wide variety of forms the disease may take and, in part, to the hysteria accompanying epidemic outbreaks. At the Colorado General Hospital, of the 339 cases admitted as cases of poliomyelitis in the epidemic of 1946 (20), eight per cent proved to have other diseases and an additional four per cent could not be definitely diagnosed. On the other hand, in the non-epidemic year of 1947, 42 per cent of the cases admitted as poliomyelitis proved to have other diseases. Such figures point to the importance of facilities for managing the "suspect" patient when setting up a poliomyelitis service. Table VI gives a listing of the various diseases with which poliomyelitis has been confused and represents the combined data from a survey of the literature, the cases admitted to the Colorado General Hospital in 1946 and 1947 (20), and the author's experience.

Again, for simplification, the various diseases are listed in Table VI under headings of the three main clinical phases of poliomyelitis, e.g., (1) *systemic*, (2) *meningitic* and (3) *paralytic*. In the systemic phase the main disease with which poliomyelitis may be confused are: acute upper respiratory infections; acute exanthematous diseases in the pre-exanthem stage; acute infectious hepatitis in the pre-icteric stage; acute infections with gastro-intestinal symptoms and



(Fig. 4)

serum reactions in the non-eruptive form. In the meningitic phase, poliomyelitis may be confused with the following: (1) diseases manifesting signs and symptoms of meningeal irritation, e.g., pyogenic, tuberculous and syphilitic meningitis, lymphocytic choriomeningitis, meningismus associated with acute infections, the acute encephalitides, acute infectious mononucleosis and hepatitis and brain abscess; (2) diseases manifesting paravertebral or leg muscle tightness, e.g., acute rheumatic fever, acute osteomyelitis, acute myositis, trichiniasis, tetanus and osteoarthritis; (3) comatose states, e.g., diabetic coma, heat prostration, hypertensive encephalopathy and drug poisonings and (4) anxiety states. In the paralytic phase, the following categories of diseases have been confused with poliomyelitis: (1) diseases causing true flaccid paralysis, e.g., acute polyneuritis, transverse myelitis, spinal cord injury, hematomyelia, lead poisoning and acute encephalomyelitis; (2) diseases causing upper motor neuron paralysis, e.g., expanding central nervous system lesions, botulism, cerebral vascular accidents and embolic injury to the brain as occurs in congenital heart disease and subacute bacterial endocarditis; (3) diseases in which pseudoparalysis may be manifested, e.g., hysteria, acute rheumatic fever, osteomyelitis, acute myositis, acute epiphysitis, septic arthritis, rickets and scurvy and (4) mild cyanide poisoning in which symptoms of hypoxia due to lowered tissue oxygenation simulates a respiratory paralysis.

APPRAISAL OF THE PATIENT

From the foregoing comments on the incidence of the wide range of diagnostic errors and variations in the clinical picture and course of this disease, the following facts become apparent:

(1) With inclusion of "abortive" cases, poliomyelitis is a relatively common disease and one which can affect any age group.

(2) All pertinent clinical data should be carefully weighed before making a definite diagnosis of poliomyelitis.

(3) With the established diagnosis of poliomyelitis including a definition of type, it is desirable to attempt to evaluate the patient from the standpoint of management and future prognosis.

In reference to (1) poliomyelitis should be included in the differential diagnosis on any patient exhibiting signs and symptoms of an acute infectious process or neuromuscular disorder of acute onset, particularly during the warm months of the year. In a high percentage of cases of frank poliomyelitis, a reasonably definite diagnosis can easily be made on the grounds of fever, headache, meningeal signs, muscle tightness, flaccid paralysis and/or spinal fluid changes as outlined above. However, in many patients, the diagnosis must be made on an exclusion basis and evaluation of individual symptoms becomes important. In our experience, diarrhea has occurred rarely and when present, was believed most likely due to a concomitant enteric infection. Other workers have found this symptom common in some epidemics. (21) The observation that 11 per cent of our patients complained of abdominal pain which was often associated with vomiting, abdominal muscle spasm and

TABLE V

POLIOMYELITIS, COLORADO GENERAL HOSPITAL, 1946

Cranial Nerve Involvement with One or More Corresponding Symptoms

Total Number of Bulbars	96
Cranial Nerves IX, X and XI (Cranial Division) (nasal speech, regurgitation of food via nose, dysphagia, pooling of secretions, hoarseness, aphonia, stridor)	82
Cranial Nerve X (Singly) (hoarseness, aphonia, stridor)	3
Cranial Nerve VII (facial palsy)	21
Extra Ocular Nerves (III, IV, VI) (diplopia, blurring, disturbance in accommodation)	10
Cranial Nerve XII (difficulty in mastication and speech)	9
Cranial Nerve V (3d Division) (difficulty in mastication)	2

tenderness explains the occasional case which can be erroneously diagnosed as acute appendicitis. Symptoms of a "cold" are often cited as an early manifestation of poliomyelitis. However, in the author's experience, on careful questioning of the patient, actual coryza occurs rarely and probably no more frequently than late summer allergic rhinitis and the common cold among the general populace. On the other hand, hoarseness or dysphonia, although of relatively rare incidence in a cross section of poliomyelitis cases, should not be taken lightly in a patient suspected of having poliomyelitis, for this symptom may be the first manifestation of glottic muscle paralysis and be proven only by visualization of the cords. Shaking chills or chilliness, common manifestations of acute infections, are relatively infrequent in this disease and, if prominent, poliomyelitis is unlikely or complicated by a pyogenic infection. On routine history-taking, the patient will occasionally state that he had "numbness" in an extremity, but in the author's experience, "numbness" to the patient with poliomyelitis has almost invariably meant loss of power associated with a sensation of heaviness, and on gross sensory testing, definite hypaesthesia or loss of vibratory sense could not be demonstrated. More credence, however, is given to the existence of hyperaesthesia, because in such patients light stroking of the skin or weighty bed clothes often evokes discomfort. This symptom has been observed to occur more commonly during the preparalytic phase. Because of the rarity of convulsions unassociated with hypoxia in poliomyelitis, pyogenic meningitis or a virus encephalitis should be first considered in a patient exhibiting this symptom, together with fever, meningeal signs and mental aberrations.

Occasionally one sees a patient exhibiting a mild degree of real spasticity associated with a positive Babinski. With the observation that in fatal cases the motor cortex of the precentral gyrus is almost uniformly, although mildly, involved, clinical signs of upper motor neuron lesions could be expected in some cases. In the author's experiences, these patients respond poorly to hot packs or hydrotherapy and easily develop contractural deformities. Such was true in two of the three children who were diagnosed as encephalospinal type of disease.

The most careful attention in making a definite diagnosis as to type of disease should be given to the bulbar-respiratory group of patients because life itself is threatened. As mentioned previously, the manifestations of hypoxia are frequently superimposed on the pre-existing disease picture and the physician needs first to recognize the signs and symptoms as due to hypoxia and, secondly, to determine the basic etiology in order to institute the proper therapeutic approach. The symptoms of lowered oxygenation or hypoxia as related by Baker et al (16 a, b) are first restlessness, apprehension, anxiety and rising pulse, all of which can become manifest before the appearance of cyanosis. If hypoxia is unrelieved or allowed to increase; dyspnea, cyanosis, mental confusion, convulsive phenomena, delirium, coma and death will ensue. The basic causative factors of hypoxia in a patient with lesions in the nucleus ambiguous is obstruction of the airway, either by salivary secretions and food, or vocal cord paralysis; in the respiratory center, deficient or inefficient control of respirations; in the circulatory center, vascular collapse, impaired cardiac filling and output; and in the cervico-thoracic cord, impaired respiratory muscle function. Pulmonary edema is an end result of any of the above conditions and is further intensified by the existent hypoxia.

Admittedly it is extremely difficult to prognosticate the immediate outcome for any individual patient during the acute phase of the disease, but a careful evaluation of certain clinical criteria can be helpful in immediate management and expectant treatment. In general, development or increase of paralysis is unlikely after fever and signs of toxicity have subsided. Local muscle tenderness or hyperaesthesia in the febrile stage oftentimes heralds weakness or paraysis of underlying muscle groups and, similarly, painful respirations with splinting of the chest may be a precursor to respiratory paralysis. Weakness or paralysis of an upper extremity should alert one to the possibility of ensuing involvement of the diaphragm and intercostal mucles. As mentioned above, a patient with a history and signs of a sore throat is more likely to develop the bulbar type of disease. A patient with ophthalmoplegia or facial palsy is a likely candidate for more serious symptoms such as pharyngeal, laryngeal or respiratory-circulatory center paralyses.

Although patients can be expected to have some continued return of muscle function up to 18 months or two years, near maximum return seems to occur usually during the first six months

TABLE VI
POLIOMYELITIS
Diagnostic Errors

I. SYSTEMIC PHASE
- Acute upper respiratory infections
- Acute exanthematus diseases, e.g., scarlet fever, rubella, rubeola
- Acute infectious mononucleosis
- Acute infectious hepatitis
- Acute gastroenteritis
- Acute appendicitis
- Pneumococcus peritonitis
- Septicemia

II. MENINGITIC PHASE
- Pyogenic meningitis
- Tuberculous meningitis
- Syphilitic meningitis
- Lymphocytic choreo-menginitis
- Meningismus with acute infections
- Acute infectious mononucleosis
- Acute infectious hepatitis
- Acute rheumatic fever
- Brain abscess
- Acute osteomyelitis
- Acute myositis
- Trichiniasis
- Telanus
- Osteoarthritis
- Diabetic coma
- Heat prostration
- Hypertensive encephalopathy
- Drug poisonings

III. PARALYTIC PHASE
- Acute polyneuritis
- Spinal cord injury
- Hematomyelia
- Lead poisoning
- Acute encephalomyelitis
- Expanding c.n.s. lesions
- Botulism
- Cerebral vascular accident
- Congenital heart disease
- Subactue bacterial endocarditis
- Hysteria
- Acute rheumatic fever
- Osteomyelitis
- Acute myositis
- Acute epiphysitis
- Aseptic arthritis
- Rickets
- Scurvy
- Cyanide poisoning

and perhaps even during the first three months after onset of the disease. In those muscle groups in which complete loss of motor function occurs and absent deep reflexes are found, an eventual return to functional power is unlikely.

The severity of disease in individual epidemics may vary considerably. In the Colorado General Hospital group of patients, with periods of hospitalization varying from eight days to one year (data compiled in September 1947), the degree of involvement on discharge was as follows: No residual, 24 per cent; minimally disabled (minimal impairment in function and no aids required), 31 per cent; moderately disabled (non-function of one extremity requiring support and/or aids in ambulation), 24 per cent; severely disabled (non-function of two or more extremities requiring support and/or aids in ambulation), nine per cent, completely disabled (bedridden), two per cent; deaths, eight per cent; hospital transfers (children early in epidemic), two per cent. However, as mentioned previously, this group of patients is probably heavily weighted with bulbar and severely paralytic types. Figures on the outcome of another epidemic are those from Maryland, 1941 (5), in which in a total of 296 patients, 50 per cent had no after-effects; 29 per cent slight after-effects ("practically normal movements"); 18 per cent marked after-affects and the mortality rate was three per cent.

Summary

1. The diagnosis of poliomyelitis is discussed and supported by presentation of the clinical data on 303 patients admitted to the Colorado General Hospital during the epidemic of 1946.

2. The clinical course of this disease is presented by description of the systemic, meningitic and paralytic phases with a classification of disease types based on the period at which the process becomes arrested.

3. The most common symptoms of frank poliomyelitis were fever, headache, anorexia, nausea, vomiting, pain in neck, back and legs, constipation, drowsiness and malaise; diarrhea, cough, coryza, chills and convulsions occurred rarely; sore throat is believed to be an important symptom in heralding the bulbar type of disease. In a group of 96 bulbar cases, cranial nerves IX, X and cranial division of XI were most frequently involved.

4. Cardinal physical signs were stiffness of the neck and back, hamstring tightness and muscular weakness or paralysis.

5. Spinal fluid cell counts were highest in the first week and can be expected to return to normal by the end of the fourth week. The protein level may be only silghtly elevated during the first three weeks and reach its maximum in the fourth, fifth and sixth weeks of the disease. Negative spinal fluid findings during the fiirst three weeks of the disease do not rule out a diagnosis of poliomyelitis.

6. The variety of diseases with which poliomyelitis can be confused is great, and the high incidence of diagnostic errors indicates a real need for provision of a screening admission clinic where an initial physical examination and spinal puncture may be done, and of observation rooms for the "suspect" cases.

7. A careful appraisal of the patient is important from the standpoint of diagnosis, classification of type of poliomyelitis in respect to the bulbar and respiratory group and immediate management of the patient.

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DIETHYLSTILBESTROL (DES) IN TREATMENT OF THREATENED ABORTION

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In 1941 the author (1) demonstrated empirically the value of estrogen therapy in treatment of threatened and habitual abortion and of premature labor. Five years later, this high-estrogen therapy was put on rational basis by Smith, Smith and Hurwitz (2) at Boston Lyin-In Hospital. The author's former publications have shown that, contrary to previous fears concerning the effects of estrogens during pregnancy, the tolerance for diethylystilbestrol by the pregnant woman is at least a thousand times that of the non-pregnant woman.

Reported herewith are 21 unselected patients with threatening abortion treated with varying amounts of diethylstilbestrol. Although dosage varies with each individual, the required amount being that which stops cramps, spotting, bleeding and pain, the following dosage regimen may generally be employed:

In the milder cases, patients with spotting and mild cramping for 4 to 12 hours, 100 milligrams are given every 15 minutes until cramps, pain and spotting stop. Then 25 milligrams three times a day are given for one week.

A dose of 25 milligrams is then given each morning up to the 8th month of pregnancy. If pain cramps and bleeding recur, doses of 100 milligrams are administered every 15 minutes until these symptoms are dispelled. Then 25 milligrams 3 times a day and once at night are given for 2 weeks, then 50 milligrams every

*From the Menstrual Disorder Clinic, Research Division, Jefferson Davis Hospital and Baylor University College of Medicine. Permission to do this work was granted by the research committee, Jefferson Davis Hospital.
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morning for 2 weeks and then 25 milligrams every morning thereafter until the 8th month. All single daily dosages are given in the morning when they are most effective in allaying uterine contraction caused by usual daily activity.

In moderately severe cases of threatened abortion, patients with cramps, spotting and bleeding for 12 to 24 hours, 250 to 500 milligrams in oil or aqueous suspension are injected into the gluteal muscles through a long spinal needle. The needle is inserted downward toward the gluteal fold making the solution less apt to be lost. Doses of 200 milligrams are given orally every 15 minutes until all signs and symptoms are controlled. Tablets of 25 milligrams, or its equivalent liquid preparation, are given 3 times daily and at bed time for 2 weeks, and every 3 to 7 days doses of 250 to 500 milligrams in aqueous suspension are given intramuscularly. After 2 weeks of this treatment, the patient is given 25 milligrams 3 times daily for two weeks, then 25 milligrams twice daily for one week and 25 milligrams daily thereafter until the 8th month. If cramps, spotting, pain or bleeding recur, an emergency dose of 50 to 100 milligrams is given orally, either as tablets or liquid.

In severe type of threatened abortion, with cramping, bleeding and pain for 2 to 4 days, doses of 250 to 500 milligrams in aqueous suspensions are given into the buttocks. Concurrently 250 milligrams to 1000 milligrams are given by mouth, tablets or liquid, every 15 minutes until symptoms are relieved. When this occurs, 250 to 500 milligrams are given intromuscularly every third day for 2 to 4 weeks. For 2 weeks, 100 milligrams are given 3 times daily at bed time. Doses of 25 milligrams are then given 3 times daily and at bed time, for two weeks, 25 mg.,four times daily for 2 months, then one, 25 mg. tablet daily until the 8th month.

Careful and complete physical examination of each patient is made and appropriate diets with special attention to vitamins are prescribed. One hundred and twenty-five consecutive patients with threatened abortion over the past nine years were given diethylstilbestrol. Not any of these patients were given bed rest which is now believed to be unnecessary. Bed rest is also good treatment but if stilbestrol is given bed rest is not needed except in a very few cases. Most know that a patient rather be up and about and take tablets than to have to stay in bed. Yet if going to bed stops cramps, pains and vaginal bleeding then the patient is kept in bed for 4 to 7 days. The following laboratory determinations were made at approximately monthly intervals: red and white blood cell counts, hemoglobin, sedimentation rate, coagulation time, bleeding time, blood serum cholesterol, blood chlorides, blood uric acid, fasting blood glucose, specific gravity of urine, urinary albumin and urinary sugar. Only abnormal laboratory findings are reported.

Illustrative of these 125 cases of threatened abortion the following 21 cases are reported in detail:

Case 1. R.A.A. White. Age 31. First pregnancy: female, now 9 years old and well. Second pregnancy: male, term, now 6 years old and well. Third pregnancy: day 63 stilbestrol therapy begun, weekly intromuscular injections. Day 120 abortion threatened with cramps for 3 days. Day 131 pain in lower abdomen. Day 154 pain in both sides. Day 170 severe backache. Day 200 backache recurred and persisted for 1 month. Day 253 abortion threatened with severe pain and cramps in lower abdomen. Day 260 but little pain in lower abdomen. Day 281 delivered of normal female. Total stilbestrol dosage 120,655 milligrams in 125 days. Laboratory: hemoglobin fell from 86 to 70 during 8th month.

Case 2. D.L.M. White. Age 26. First pregnancy: miscarried at 6month, cause coitus. Second pregnancy: day 205 pain in abdomen, stilbestrol started. Day 299 severe abdominal cramps continuing intermittently until delivery, worse on days 231 and 258. Day 258 severe cramping and contraction. Day 268 delivered of normal female. Total stilbestrol dosage 45,500 milligrams in 63 days. Laboratory: slight fall in hemoglobin toward end of pregnancy.

Case 3. J.A.R. White. Age 20. First pregnancy: bleeding at approximately weekly intervals for one hour, cramps and pain in leg. Day 25 stilbestrol begun. Day 161 pulling sensation in both lower abdominal quadrants following a fall. Day 163 fainted and fell, bleeding, which was controlled by additional stilbestral. Day 215 cramps lasting about a week controlled by intramuscular stilbestrol. Day 253 stilbestrol stopped. Day 270 delivered of normal female. Total stilbestrol dosage 7,410 milligrams in 229 days. Laboratory: negative.

Case 4. F.S. White. History of old endometriosis. First pregnancy: day 74 stilbestrol started and continued until day 104. Day 138 stilbestrol resumed because of plain low in abdomen especially after riding. Day 225 hard contracting uterus, stilbestrol to control cramps. Day 249 stilbestrol stopped. Day 263 delivered normal female. Blood loss 175 cc. Total stilbestrol dosage 27,850 milligrams in 141 days. Laboratory: increase in hemoglobin and leukocytes just before delivery.

Case 5. N.H.W. White. First pregnancy: term. Second pregnancy: day 77 abortion threatened with gush of blood, stilbestrol for 6 days. Day 190 painless bleeding, 250 milligrams stilbestrol daily. Day 240 stilbestrol stopped, Caesarian section following several days of bleeding. Total stilbestrol dosage 1,680 in 56 days. Laboratory: fall in hemoglobin. Urinary albumin and sugar in 8th month.

Case 6. G.P.W. White. First pregnancy: Day 37 stilbestrol started and continued until day 57. Day 89 bleeding and severe backaches for two weeks, stilbestrol resumed. Day 113 cramps. Day 148 stilbestrol stoped. Day 276 delivered of normal male. Total stilbestrol dosage 2,620 milligrams in 81 days. Laboratory: negative.

Case 7. M.S.S. White. Age 24. History of sterility. Stilbrestrol 0.5 milligram daily to produce ovulation. First pregnancy: during last menstrual cycle spotted on day 21, flooded on day 22 and spotted on day 23. On day 45 of menstrual cycle (day 31 of pregnancy) backache and cramping in lower abdomen but not bleeding, stilbestrol started. Day 62 severe backache. Day 155 cramping controlled by additional stilbestrol. Day 206 cramping controlled by additional stilbestrol and continued until delivery. Day 297 delivered normal male. Total stilbestrol dosage 30,000 milligrams in 266 days. Laboratory: reduced leukocytes just before term. Trace of urinary albumin in 8th month.

Case 8. A.H.N. White. Age 23. First pregnancy: Day 63, 15 milligrams stilbestrol as test for pregnancy. Day 68 daily doses of stilbestrol started. Day 98 spotting without cramps. Day 99 aborted. She had been examined that day and small amount of blood in vagina, and about 6 hours later passed fragment of placenta. Total stilbestrol 86,215 milligrams in 33 days. Laboratory: negative.

Case 9. L.M.P. White. Age 33. History of endometriosis treated with stilbestrol. First pregnancy: Stilbestrol 0.5 milligram started. Day 27 abortion threatened with bleeding for two days. Day 29 stilbestrol 25 milligram tablets started because of bleeding. Day 76 and 80, abortion threatened with bleeding, but controlled by additional stilbestrol. Stilbestrol continued until delivery. Day 257 delivered normal female. Total stilbestrol dosage 16,728.5 milligrams in 235 days. Laboratory: negative.

Case 10. V.K. White. Age 36. First pregnancy: starting on day 21 abortion threatened with cramping and pain in lower abdomen continuing for 3 weeks. Day 51 stilbestrol started and continled to delivery. Day 145 abortion threatened with cramping controlled by additional stilbestrol. Intermittent cramping until day 200. Day 270 delivered of normal female, easy delivery with 200 cc. blood loss. Total stilbestrol 43,475 milligrams in 228 days. Laboratory: negative.

Case 11. J.P.K. White. Age 20. First pregnancy: Day 67 flood. Day 68 stilbestrol started and continued until aborted on day 131. Cramping moderate to severe, backache, spotting and bleeding all through pregnancy but controlled with large doses of stilbestrol. Day 129, 1000 milligrams intramuscularly. That afternoon membranes ruptured and there was severe pain. Day 131 aborted. Total stilbestrol 32,425 milligrams in 63 days. Laboratory: negative.

Case 12. L.W.P. White. Age 29. First pregnancy: day 24 abortion threatened with cramping and pressure in vagina lasting 6 days, stilbestrol started. Day 38 stopped medication on own accord—did not want to take pills because of nausea and has to eat too much to control nausea. Day 45 aborted, blighted, profuse hemorrhage for 11 days before abortion. Total stilbestrol dosage 66.25 milligrams in 15 days. Laboratory: trace of urinary albumin 2 weeks after abortion.

Case 13. M.O.K. White. Age 17. First pregnancy: Day 59 stilbestrol statred and continued until day 75 when abortion occurred, normal fetus, excess decidual reactions, grossly Total stilbestrol 1200 milligams in 12 days. Leboratory: Frog test positive on day 54.

Cast 14. G.H. Colored. Age 18. First pregnancy: term, male, now 10 months old and well. Second pregnancy: first examination February 7, 1949 showed uterus size of 4 months pregnancy. Menstrual history dated periods December 24, 1948, and January 26, 1949, normal periods. February 7, 1949, stilbestrol started. Large doses of stilbestrol were given by mouth and by intromuscular injection until delivery of normal female May 17, 1949. Total stilbestrol dosage 192,100 milligrams in 99 days. Laboratory: low hemoglobin throughout pregnancy.

Case 15 S.P.F. White. Age 23. First pregnancy: Two year old child living and well. Second pregnancy: aborted at 6 month, two years before present pregnancy. Third pregnancy: day 137 threatened to abort with bloody discharge, heavy bearing down sensation and sharp abdominal pains. Day 139 stilbestrol given. Day 149 routine stilbestrol started and continued at intervals when cramps occurred to time of delivery. Total stilbestrol dosage 3,950 milligrams in 18 days. Laboratory: hemoglobin low throughout pregnancy. Albumin and faint trace of sugar in urin at time of delivery.

Case 16. W.R.B. White. Age 25. First pregnancy: Day 54 stilbestrol statred. Day 128 abortion threatened with bleeding for 3 days. Day 266 delivered of normal female. Total stilbestrol dosage 20,625 milligrams in 163 days. Laboratory: negative.

Case 17. A.J.G. White. Age 27. First pregnancy: male, now 17 months old, weight 7 pounds, 11 ouunces at birth. Second pregnancy: Day 106 stilbestrol started. Day 161 slight cramping. Day 203 occasional cramps. Day 213 cramps of abortion controlled by 650 milligrams stilbestrol. Day 220 delivered of normal male. Laboratory: low white blood cell count just before and one month after delivery.

Case 18. L.P. White. Age 33. First pregnancy: Day 29 stilbestrol started and continued until delivery. No threatening. Day 270 delivered of normal female now 3 years old and well. Total stilbestorl dosage 35,775 milligrams in 169 days. Laboratory: negative. Second pregnancy: day 33 abortion threatened with spotting and cramping, stilbestrol started. Spotting with cramps continued unti day 55. Day 75 last visit to this clinic, no more stilbestrol. Day 133 aborted. Total stilbestrol 25,937.6 milligrams in 43 days. Laboratory: negative.

Case 19. D.E.J. White. Age 31. First pregnancy: male, now age 13 and well. Second pregnancy: female, no wage 9 and well. Third pregnancy: male, now age 5 and well. Fourth pregnancy: threatened to miscarry all through pregnancy, had to remain in bed entire 9 months. Delivered of female, now age 4 and well. Fifth pregnancy: days 5 and 6 abortion threatened with cramping and pain in abdomen, stilbestrol started in large doses on day 6. Cramps in abdomen continued intermittently during entire pregnancy but there was no bleeding except on days 16 and 17. Day 281 delivered of normal male, rapi ddelivery, 300 cc. blood loss. Total stilbestrol dosage 259,903 milligrams in 172 days. Laboratory: slight trace of urinary albumin in 8th month.

Case 20. S.G. Mexican. Age 27. First pregnancy: term, large female now age 6 and well. Second pregnancy: Day 191 stilbestrol started. Day 226 abortion threatened with cramps in lower abdomen and continued intermittently until delivery. Day 250 delivered of normal twins, boy and girl. Total stilbestrol 12,100 milligrams in 59 days. Labortary: red cell count and hemoglobin low throughout pregnancy. Low leukocyte count toward end of pregnancy. Trace of urinary albumin in 7th month.

Case 21. B.P.C. White. Age 28. First pregnancy: Day 251 abortion threatened with cramping, pains in lower abdomen and lower back and continued until delivery. Day 256 silbestrol started and continued until delivery. Day 288 delivered of normal male, 8 pounds, three ounces. Total stilbestrol dosage 1,600 milligrams in 32 days. Laboratory: trace of urinary sugar on day 262 and 15 days following delivery.

COMMENTS

Case 1 illustrates the advantage of stilbestrol therapy as a prophylactic against abortion. This patient was given diethylstilbestrol on day 63 preventing any threat of abortion until day 120 when increased diethylstilbestrol dosage controlled the symptoms, carrying the pergnancy to term.

Case 18 is a convincing illustration of the prophylactic value of diethylstilbestrol therapy. This patient was given diethylstilbestrol from the 29th

day of her rst pregnancy until day of delivery and showed no signs of threatening abortion. In her second pregnancy abortion threatened on day 33 and was controlled by the immediate institution of diethylstilbestrol therapy. This carried the pregnancy safely until the 75th day when the patient received other medical care which did not include this therapy. She aborted on day 133.

Cases 4 and 9 illustrater the value of diethylstilbestrol in endometriosis. This therapy is discussed elsewhere.

The early prophylactic use of diethylstilbestrol i strongly recommended in all primiparae since there has been no previous opportunity of determining their proneness to abort.

There has been demonstrated repeatedly that this therapy is without harm even in the patient who would not abort even without the treatment.

Summary

1. Effective diethylstilbestrol dosage routines in mild, moderately severe and severe types of threatened abortion are outlined.

2. Massive diethylstilbestrol in 21 cases of 21 cases of threatened abortion gave fetal salvage of 76%.

3. Evidence is presented of the efficacy and harmlessness, even in primiperae, of routine massive diethylstilbestrol therapy as prophylaxis against the usual smptoms of threatened abortion.

4. Every case requires a different dose to save their threatened abortion. The amount that keeps patient from aborting is the right dose whether it be 25 mg. daily or 2500 mg. daily. Can give too little but not too much diethylstilbestrol.

5. Massive doses of diethylstilbestrol produces no damage to mother and/or child.

6. Stilbestrol will allow patient to be up and about, doing her normal duties, so eliminating short or long periods of bed rest.

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Diethylstilbestrol products used in this study were:
(1) Bio-des for intromuscular injection.
(2) des tablets
(3) des liquid for oral use.
Grant Chemical Company, Inc., New York City.

329 Medical Bldg., Houston 2, Texas.

REGURGITATION ESOPHAGITIS

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Recently the authors studied a case in which regurgitation esophagitis with ulceration in the lower esophagus was an important feature. Eventually the case required surgical intervention because of stenosis of the lower esophagus. In the preoperative discussions between the medical and surgical services, the problem imposed by the irritative regurgitation of gastric contents was realized to be important in planning the surgical and postoperative management of this case. This resulted in the realization that the subject of regurgitation esophagitis was worthy of more consideration by the medical profession. In a 1936 issue of the A.M.A., Vinson and Butt (2) claimed that esophagitis occurred oftener than any other lesion of the esophagus. In their series of 3000 necropsies, 7% or 213 had esophagitis. Regurgitation of gastric juices is probably the commonest cause. Surprisingly, retrograde studies showed that only 10% of the charts of these cases contained notations pertaining to symptoms referable to the lower esophagus. In a 1943 issues of Radiology, L. W. Paul (5) comments in a similar manner. In contrast to the frequency of esophagitis with paradoxically few references to it the literature, there are numer-

*Reviewed in the Veterans Administration and published with the approval of the Chief Medical Director. The statements and conclusions published by the authors are the result of their own study and do not necessarily reflect the opinion or policy of the Veterans Administration.

ous articles concerning cardiospasm, congenital anomalies, strictures, diverticula, varices and tumors of the esophagus as well as functional dyspepsia, Plummer-Vinson Syndrome, perforations and foreign bodies.

The case is as follows: The history goes back to 1946 when as a 32-year old white male, he noted substernal fullness when eating. In 1947 surgery was resorted to through a thoracic approach at an Army General Hospital. The esophagus was found to be normal. A small hiatus hernia containing a chronic peptic ulcer was found and excised. A gastro-esophageal anastomosis was made. The cardia of the stomach was brought up into the thorax (to reduce tension on the suture line). The intrathoracic stomach was anchored by sutures to the paravertebral structures. The early postoperative course was stormy and complicated by left pleural effusion. Eventually, periodic dilation of the anastomotic area was instituted. In April 1949, or two years later, a few days after one such dilatation wih a No. 52 Bougie, an attack of severe hematemesis occurred. The patient was hospitalized. Ten days later, barium swallow and x-ray plates showed one inch of high grade stenosis just above the gastroesophagal junction. At esophagoscopy, a marked stenosis in this general area with only a peripheral slit-like passage-way was seen. The upper surface of this stenotic shelf was occupied largely by a shallow ulcer crater. Gastric analysis revealed moderate acid values. The existing condition was believed to contraindicate more dilatation because of the trauma and hemorrhage it would involve. Instead, a strict Sippy regime was considered and instituted. Neverthleess, low sternal burning at night continued until the patient was instructed to sleep in a semi-recumbent position. This position decreases regurgitation up into the esophagus. Subsequent esophagoscopy showed the ulcer to have healed, but the shelf-like encroachment of the esophageal lumen remained. The patient was eventually allowed to leave the hospital with instructions to follow a modied Sippy regime. However, the patient cooperated only partly. Some moderate obstruction to soft food continued in the low substernal area. In November 1949, he had another severe hematemesis. Esophagoscopy again revealed the lower esophageal shelf-like obstruction but no ulcer. Instead, there was a diffuse hyperemic esophagitis in the lower esophagus. This area bled freely at esophagoscopy without direct trauma. The Sippy regime again was made more thorough and the patient repeated his previous improvement except that the substernal obstruction now became progressively more prominent. To determine the degree of the stenosis, at esophagoscopy, bougie passage was tried cautiously. A No. 10 bougie could be passed but not a No. 12. Effective dilatation was not believed to be feasible. He was operated on in late January 1950 while the procedure was still an elective one. The left thoracic approach was again chosen. Because of diffuse adhesions, about four hours of blunt and sharp dissection was necessary to reach the gastro-esophageal area. Adjacent to and pressing on the esophagus the adhesions were particularly dense. There were severed. The esophagus was opened immediately above the anastomosis and, surprisingly, only a mild thickening of the wall was present. The mucosal surface was normal. Apparently, the recent esophagitis had clearup on the medical program, and the shelf-like obstruction had been produced by the effects of extrinsic dense adhesions. The anterior vagus nerve was still intact and a segment of this was removed. The posterior vagus had been interrupted in 1947. A simple cardioplasty was also done. The status of the partial thoracic stomach was allowed to continued unchanged. The postoperative course was satisfactory and the patient became free of the low sternal obstruction. He was again discharged. To date he has been asymptomatic. X-rays during convalescence reveal no hindrance to the passage of barium in the lower esophagus.

ETIOLOGY:

In the March 1948 issues of C.G.O.G., Olsen reviews the literature concerning esophagitis and stated that regurgitation of gastric juice was the commonest cause. In this paper, esophageal ulcers and regurgitation esophagitis will be used interchangeably as usually the difference is only quantitative. The esophageal mucosa is generally conceded to be less resistant to peptic digestion by gastric juices than is gastric mucosa. While the esophageal mucosa contains mucous forming glands, the relative efficiency of this defense mechanism in comparison to that of the gastric mucin in the stomach is unknown. The literature claims periodically that the lower esophagus is the third most common location of peptic ulcer.

DIFFICULTIES IN THE DIAGNOSIS OF ESOPHAGITIS:

One difficulty is that many cases of esophagitis are not accompanied by manifestations that attract attention. This was the experience of P. Vinson. (2) As would be expected, the esophagoscopists wrote most of the articles concerning living patients with proven cases of esophagitis with or without ulcers or of scars in the esophagus presumed to be residuals of lucers. Another difficulty is that the commonest symptom in esophageal ulcer or regurgitation esophagitis is discomfort that usually as called "heartburn." This is so commonly a functional complaint and treated casually by household medications that one's suspicion index is low when a case with an organic basis is encountered. If, instead of the misleading term "heartburn," a more proper designation had been popularized, peptic esophagitis with or without ulceration would be considered oftener. Also demonstration of niches by x-ray in cases of ulcers of the esophagus is the exception rather than the rule. Esophageal ulcers are usually shallow. Also peptic esophagitis may not be associated with crater formation but instead be a diffuse superficial process. Likewise, x-ray demonstration of a lower esophageal spasm is not pathogonomonic of peptic pathology. Gastric ulcers, duodenal ulcers, gallbladder disease, gastritis, or psychic factors may cause reflex spasm in the area of the cardiac phincter. Esophagoscopy by the better known rigid, open end type of esophagoscope is dangerous enough that this procedure is not a widely utilized diagnostic procedure. The new Schindler optic esophagoscope or the Boros flexible esophagoscope are very safe but are not as yet widely used. The flexible gastroscope has not helped in this field as it does not visualize the esophageal lumen since the mucosa is too close to the objective window. The lower esophagus commonly is not carefully examined at post-mortem studies. Accordingly, the frequency of peptic esophagitis is easily overlooked and its importance not fully apreciated. Regurgitation esophagitis is usually situated low but may be higher in the esophagus especially when diverticula or other hindrances exist to trap gastric regurgitation. Regurgitation esophagitis is more common when chronically lax diaphragmatic and cardiac sphincter action exists. Hiatus hernia and intrathoracic stomach are good examples of decreased phincter action. Hiatus hernia is common after the age of 50 in obese individuals. The literature periodically describes insidious bleeding resulting from the esophagitis or peptic ulcerations co-existing with hiatus hernia. The enemia can be marked but the process obscure enough that the cause may be overlooked without adequate study. Likewise common is the more transient gastric regurgitation in narcosis, anesthesia, alcohol excess, barbiturate coma, toxic states, etc. Debilitating disease also predispose as those conditions are usually associated with the patient spending much time in a horizontal position which favors regurgitation.

Another cause of regurgitation esophagitis is frequent belching. If, because of esthetics, the belching or burp is suppressed, more complete gastric regurgitation may occur. Regurgitation esophagitis from frequent vomiting is easily understood. A frequent cough can act similarly. In some individuals, more overloading of the stomach results in regurgitation. Some rheumatics experience low esophageal burning while on salicylate therapy. Whether in-dwelling stomach, duodenal or Miller-Abbott tubes cause or merely aggravate regurgitation esophagitis is still controversial. Relaxed tissues in senility can be a factor. In the Vinson and Butt (2) series of 213 cases of esophagitis, 75% had had major surgery shortly before. Most commonly the surgery had been done for the gallbladder, duodenal ulcer, various obstructions of the gastrointestinal tract or hiatus hernia. In 1936, Hans Selye (7) noted esophageal ulcers in experimental animals after producing pyloric obstruction by the use of ligatures.

THE SHORT ESOPHAGUS:

Peptic esophagitis naturally brings up the subject of the "short esophagus". Congenital short esophagus and the partial thoracic stomach resulting therefrom is, fortunately, not common. When present, the same increased tendency for regurgitation into the esophagus exists since the sphincter action of the diaphragm is absent. Acquired "short" esophagus is more common. When diagnosed preoperatively, it is frequently not found at surgery as the apparent shortening is commonly a manifestation of spasm of the esophagus. The relaxing effect of the anesthesia allows the esophagus to assume its true length. In experimental animals, Dey and his associates

(9), in 1946, produced spastic shortening of the esophagus by stimulation of the vagus nerves, manipulation of the stomach, liver and other abdominal viscera. Distention of the gallbladder also acted similarly. However, permanent acquired shortening of the esophagus can occur if the shortening due to spasm has been chronic. This may explain cases of true acquired shortening of the esophagus associated with some hiatus hernias. The increased difficult at surgery is obvious.

PATHOLOGY:

Vinson and Butt[2] describe the pathology seen in their series of 215 cases of esophagitis obtained by post-mortem studies. In 163, or 76.5%, there was acute ulcerative esophagitis. There was loss of epithelial cells. The muscularis mucosa, when remaining, was infiltrated to varying degrees of neutrophils. This inflammatory reaction may extend to the submucosa and muscularis. The mucous glands were dilated due to blockage of the ducts. Hyperemia with or without thrombosed vessels was present in the mucosa. Pseudimembrane was present in 12½%. In 1% there were abscesses in the outer fibrous coat. Of the 213 cases, 4.5% revealed subacute ulcerative esophagitis. The predominating cells were lymphocytes, plasma cells, eosinophils, and fibroblasts. In the cases of chronic esophagitis, there were varying degrees of fibrosis. Post-mortem digestion was not believed to have produced the above-mentioned varying degrees of pathology.

DIAGNOSIS:

After the clinical syndrome of "heartburn" appears, diagnosis is usually made on the basis of the location and character of the distress. The complaint is a steady burning type of discomfort at the region of the xiphoid process. The discomfort is higher than that seen in gastric or duodenal ulcer and with usually slower and less relief from food or alkalies. In refractory or complicated cases, x-rays and esophagoscopy are indispensible. As mentioned before, the special value of endoscopy is demonstrated by the fact that the earlier case series were reported by esophagoscopists. Clinically, spasm of the lower esophagus is sometimes confused with angina. This is especially so when frank pain occurs instead of heartburn. In severe cases the pain reference may be to the neck or even the arms. Olsen[6] states that pain is more likely to be with radiation when it is the result of diffuse esophageal spasm.

TREATMENT:

In many, preventive measures are adequate. Such would include control of hiccups, frequent belching, psychoneurotic habits, unecessary cough, straining at stool, irritating foods and medications, alcoholic excesses, etc. Irritation by prolonged presence of indwelling gastric tubes, duodenal tubes, etc., must be considered. Experiences with this patient stress the importance of bland foods, a Sippy regime, and sleeping in a semi-erect position. These will prove helpful in other cases in which regurgitation esophagitis is sufficiently important. Less exacting programs will suffice in milder cases. Since the heartburn and other substernal forms of discomfort caused by regurgitation esophagitis do not respond as quickly to anti-acids as do the symptoms of uncomplicated subdiaphragmatic peptic ulcers, lozenges containing anesthesin or orthoform may be helpful. Aluminum hydroxid or phosphate preparations will help not only by being acid buffers but also by their astringent effects. Bismuth subcarbonate or the periodic use of olive oil have their advocates. Belladonna and mild sedation will help some. In cases with severe pain, opiates will be necessary for a while. The possibility of habituation must be considered. Stenatic areas that remain bathed by gastric regurgitation or which are traumatized by the passage of food may respond to dilation. If not, surgery may be necessary, as also it would be for diverticula that trap the regurgitated material. Occasionally, gastrostomy is required to give adequate rest to the esophagus. Partial pyloric obstruction may require surgery. The relief of complete pyloric obstruction, when present, is obviously necessary for nutrition. With obstinate cases of esophagell ulcers, vagotomy with gastro-enterostomy, a resestion of the stomach or resection of the esophageal lesion my be indicated.

OTHER FORMS OF ESOPHAGITIS:

Regurgitation esophagitis is the commonest type of esophagitis. Esophagitis of other etiotogics include:

1. Caustic esophagitis, acid or alkali.
2. Foreign body irritation esophagitis.
3. Esophagitis associated with central nervous system lesions.
5. Stasis esophagitis

6. Esophagitis by extension of neighboring disease
7. Arteriosclerotic esophagitis
8. Curling ulcers in the esophagus in burn cases
9. Esophagitis due to virus, fungi, yeast, etc.
10. Rare esophagitis such as in scleroderma, etc.

COMMENT:

The stenosis in the case reported as not due to regurgitation esophagitis, However, regurgitation esophagitis with or without ulcer formation can go on to astenosis.

CONCLUSION:

1. The frequency of regurgitation esophagitis is such as to warrant more consideration by the medical profession.
2. The term "heartburn" is misleading and therefore is not desirable. The term "regurgitation esophagitis" is hereby recommended.
3. Esophagoscopy is worthy of more utilization now that safer instruments are available.

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Editorials

PEPTIC ULCER

The changing seasons highlight again the problem of peptic ulcer. It is of interest to review the changes in professional viewpoint which have occurred during recent years in regard to this important disease.

Perhaps the most interesting change in concept has been the trend towards considering gastric ulcer and duodenal ulcer as rather distant cousins and not as locational variants of a single disease. Justification for this attitude lies not only in the differences in treatment of choice and in response to various forms of treatment but also in an increased awareness of the physiological differences between the two conditions. Surgical resection for uncomplicated gastric ulcer is commonly advised now partically because of the difficult diagnostic differentiation from early cancer but also because of the extremely satisfactory long term results of such treatment. This is in contradistinction to duodenal ulcer in which situation the problem of anastamotic marginal ulceration is a serious one. The difference is likely related to the fact that gastric hypersecretion is usually marked in the patient with duodenal ulcer and seldom present in the patient with gastric ulcer.

The question of etiology of peptic ulcer remains poorly understood. There is unfortunately no satisfactory way of recognizing the individual who is going to develop ulcer. In view of the strong tendency to recurrence which exists there must be some significent physiological aberation. The present attitude towards etiology may be summed up by the presumption of an underlying or predisposing factor of chronicity which predisposes the individual to the development of ulcer and operates to prevent its complete and permanent healing. Superimposed upon this situation the facts at hand require an acute precipitating event which initiates the chain of events leading to a chronic ulcer.

The field of diagnosis has shown no major change during the past decade and the procedures of value may be listed in this order:

1. History
2. X-ray examination
3. Gastroscopy (for Gastruc Ulcer)
4. Therapeutic Trial.

It would appear that diagnostic X-ray methods for peptic ulcer have reached the ultimate in their refinement and that there is a tendency to expect more from the method than it can conscientiously contribute. There is only one direct X-ray sign of uncomplicated peptic ulcer, the demonstration of a niche or crater. This is the only finding of value in the diagnosis of gastric ulcer. In duodenal ulcer the niche cannot be regularly exhibited. Here often the diagnosis must depend on the demonstration of a more or less typical contractural deformity. While accurate statistics regarding this problem are difficult to obtain Ivy and his coworkers state that from 5 to 10% of gastric ulcers and from 10 to 20% of duodenal ulcers cannot be demonstrated by X-ray. If careful study of a patients history is made and found to be suggestive of peptic ulcer cases with negative X-ray studies should be given a therapeutic trial. A tentative diagnosis can often be made upon the basis of such a trial. From a diagnostic standpoint the chief problem of the clinician lies in the interpretation of an equivocal X-ray report of ulcer in a patient who does not have the symptoms of ulcer. The radiologist can prevent much diagnostic confusion by reporting his studies as: (1) showing peptic ulcer (2) as showing definite X-ray evidence of peptic ulcer, or (3) requesting reexamination.

The treatment of gastric ulcer in good risk cases is gradually shifting in the direction of subtotal gastrectomy for the reasons mentioned above. The treatment of uncomplicated duodenal ulcer has progressed in few details since the day of Sippy and in some respects has regressed. Certainly the meticulous attention to patient cooperation and the precise control of hyperacidity and secretion which Sippy taught are not often enough a feature of modern practice. To those who have observed the coming and going of the multitudinous shortcuts proposed for the treatment of duodenal ulcer such as larostidin, gastroenterostomy, vagotomy, and enterogasterone to mention a few, the future of the new drug banthine will be watched with interest. It apparently is quite a potent drug and worthy of clinical trial but time and unbiased observation will be needed to evaluate its true worth. For the present at least the treatment of choice in uncomplicated duodenal ulcer continues to be a careful dietary program of the Sippy type with physical and mental relaxation during the period of healing combined with the judicious use of antispasmodics preferably belladonna and antacids, the amount and type of which to be determined by the degree of hypersecretion present and the bowel status of the individual case.

CONTRIBUTORS

The Editor sincerely solicits contributions of scientific articles for publication in *Arizona Medicine*. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.

2. Be guided by the general rules of medical writing as followed by the *Journal of the American Medical Association*. (See *Medical Writing* by Morris Fishbein.)

3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.

4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.

5. Submit manuscript typewritten and *double-spaced*.

6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

The Editor is always ready, willing, and happy to help in any way possible.

WHAT DO YOU THINK?

Emanating from the Third National Medical Public Relations Conference on a county medical society level held in Cleveland, Ohio, December 3 and 4, 1950, the PHYSICIAN-SOCIETY was requested to answer the following questions as to "physician-patient" relationship, the keystone to a successful public relations program urged for accomplishment during the year 1951.

1. Is 24 hour emergency service maintained in your community?
   Do you care for your patients when they call you at 2:00 a.m.?
   Do you have emergency telephone service at your hospital?
2. Do you comply with and help maintain the local fee schedule ?
   Do you itemize your statements?
   Do you explain your charges FIRST instead of after doubt arises?
   Do you accept as payment in full checks from insurance cases where additional charges on your part would work a hardship on the insured?
   Do you discuss these problems with NEW MEMBERS of your society to assist them in getting acquainted with local custom?
3. Do you read "The Principles of Medical Ethics" and your Constitution and By-Laws?
4. Does your county medical society or state association have a "Grievance Committee" that really functions?
5. Do ALL THE PEOPLE IN YOUR COMMUNITY receive medical care? Do you encourage new residents to select a "family physician" before illness strikes?

IF GOOD PUBLIC RELATIONS BEGIN AT HOME, what does your reception room look like?

Letter to the Editor

November 3, 1950

Frank J. Milloy, M.D.
Editor, Arizona Medicine
401 Heard Building
Phoenix, Arizona

Dear Dr. Milloy:

In the personal note of the Arizona Medicine for October 1950, I noticed a note that I had just completed a year's residency in cancer surgery at the M. D. Anderson Hospital in Houston, Texas.

This is not entirely correct, and while no retraction is needed for what you have said, I wish that you would publish the correct information in the same column in the near future.

The correct information is that I have just returned to practice after an absence of sixteen months; one year of which was spent as a fellow in malignant disease at the M. D. Anderson Hospital for cancer research and the University of Texas Post Graduate School of Medicine in Houston. This time consisted of four months being spent on tumor pathology, four months being spent on radium and X-ray therapy and four months being spent on general tumor surgery. So as you see, this was not a residency in cancer surgery. Following this, I was staff surgeon at the University of Texas Post Graduate School of Medicine, M. D. Anderson Hospital for Cancer Research, being in charge of the head and neck tumor surgery at that institution for four months.

I wish to thank you for your attention to this matter and for a publication of the correct statement.

Very truly yours,

JAMES M. OVENS, M.D.

EXECUTIVE SECRETARY'S REPORTS

REPORT ON THE THIRD ANNUAL PUBLIC RELATIONS CONFERENCE

Dr. Elmer L. Henderson, President of the AMA, in his salute to county medical societies during the opening two-day session of the Third National Medical Public Relations Conference held in Hotel Statler, Cleveland, Ohio, December 3 and 4, 1950, stated: "The quickest way to eliminate threats to the American Medical Profession is to meet the people's need for adequate care at a price they can afford to pay" and whether intentional or not struck the keynote to what in my observation became or was the most widely discussed topic of the conference. Dr. Henderson emphasized: "Positive action for the public good is the essence of successful public relations."

Louis B. Seltzer, Editor of the Cleveland Press and one of the principal speakers at the conference banquet, stated: "The family physician

of past years had the world's finest public relations without knowing it. Public relations must be added to the growing list of medical specialties" and he cautioned the group that "it could not afford to protect the doctor not true to the highest ideals of the medical profession and urged it to recognize that the subject of medical care is not the exclusive domain of the medical profession."

Dr. John W. Cline, President-elect of the American Medical Association, in his address before the assembly emphasized that the doctor can best serve his profession through good physician-patient relations. This can be achieved through proper education of the profession itself, handicapped only by those members who are inactive and do not take part in county and state programs. Summarizing, the most prevalent complaints of today are (1) excessive fees, (2) inavailability of medical care, (3) the practice of rebates, and (4) gentlemanly conduct. To further improve public relations the physician is encouraged to take an active part in civic enterprise and strive to improve press relations through periodic physician-press conferences. State Associations must display leadership to their component county societies and likewise, the AMA must continue leadership and cooperation among its constituant bodies thereby more firmly cementing its ties and prepare for the future.

Dr. Cleo M. Miller, President of the Nashville (Tennessee) Academy of Medicine, presided as Chairman over a panel discussion on laying the ground work for a successful public relations program. Participants were Dr. Russell B. Roth, Secretary of the Erie (Pennsylvania) County Medical Society; Mr. Arthur P. Tiernan of Evansville, Indiana, Executive Secretary to the Vanderburg County Medical Society; Mr. Henry S. Johnson, Executive Secretary of the Medical Society of Virginia; Dr. Charles S. Lakeman of Rochester, New York, Chairman of the Public Relations Committee of Monroe County Medical Society; and Dr. R. B. Chrisman of Miami, Florida, Secretary of the Dade County Medical Society. It was quite evident from the discussions presented by these able speakers that the first requisite to a successful P/R program is the full and enthusiastic participation of the medical profession itself. One could readily understand the success achieved in these states through organization and a determination to bring medicine's story to the people through deeds and not words. Among the most notable accomplishments were the establishment of county medical Service Bureaus providing medical care for all on a 24-hour basis, including provision for an effective emergency call system; operation of grievance committees either on a state or county level with emphasis on granting such committees adequate disciplinary authority; support of all voluntary health insurance plans and provision for a schedule of regular monthly payments for those patients who are uninsured; establishment of an effective speakers bureau capable of discussing both medical and social subjects with availability on short notice; continuation of a well balanced radio advertising program and establishment of proper training for members of physicians' staffs in the art of building daily good physician-patient relations.

Mr. Rollen W. Waterson of Oakland, California, Executive Secretary of Alemeda County Medical Society, presided as Chairman over a panel discussion on Activities With a Purpose. Speakers were Dr. Eugene A. Ockuly of Toledo (Ohio) Academy of Medicine; Dr. Fred Sternagel of West Des Moines, Iowa, Chairman of the Committee on Medical Service and Public Relations of the Iowa State Medical Society; Dr. E. L. Bernhart of Milwaukee, Wisconsin, President of the Medical Society of Milwaukee County; Dr. William M. Skipp of Youngstown, Ohio, representing Mahoning County Medical Society; Dr. Carl H. Vohs of Clayton, Missouri, President of the Missouri Medical Service and former President of the Missouri Medical Association; and Dr. Frederick B. Davies of Scranton, Pa., representing the Committee on Emergency Disaster Medical Service, Medical Society of the State of Pennsylvania. This discussion in effect re-emphasized the importance of active participation in those fundamentals hereinabove outlined as representative of the ground work of a well rounded P/R program, each being considered an essential part of the over all pattern. The scope of activity in each field must of necessity be developed around the individual community need, however, there can be little doubt of such need.

Possibly the words of Dr. Carl H. Vohs of the Missouri Medical Service speaking before some 375 members of the AMA Public Relations Conference may best sum up the intense interest

and seriousness of its deliberations when he stated: "As long as any but indigent Americans do not have adequate health insurance, the danger of Socialized Medicine remains with us. It may seem like the medical profession has convinced the people of the folly of State Medicine and that private medicine serves them best—especially after the last election—but this is only a truce, a breathing spell to complete our job. With the world situation as chaotic as it is, the American people seem ready to submit to any controls or regulations and that they may become accustomed to allocations and regulations from government. That is one of our dangers. The other is inertia within our own profession. With many of our members going into the service those remaining will be over burdened trying to care for the people and will rely on the National and State Associations pushing the fight. But the fight must be won on the local community level. Approximately 70 million people now are covered by some form of hospital insurance and 40 million by some surgical plan. I urge the doctors not to rest until every community has such protection. The American people will have health insurance through us or through the government."

The announcement by Dr. Louis H. Bauer, Chairman of the Board of Trustees of AMA, at a dramatic, early morning meeting of the House of Delegates held December sixth, that it had appropriated $500,000.00 out of its National Education Campaign Fund, raised to defend medical freedom, for the aid and support of medical schools in need of additional financing, was a realistic blow to federal subsidies and received unanimous approval. It is the hope that this will start a chain reaction and become a stimulus to physicians and other professions, industries, businesses, labor groups and private donors to contribute to this very important cause of protecting and advancing the interests of medical education and the public health.

Respectfully submitted,
ROBERT CARPENTER,
Executive Secretary.

REPORT ON THE NATIONAL EDUCATION CAMPAIGN CONFERENCE OF THE AMERICAN MEDICAL ASSOCIATION

The Third Annual Conference of the National Education Campaign of the American Medical Association met in joint session with the House of Delegates in the Grand Ballroom of Hotel Statler in Cleveland, Ohio, December 7, 1950. Dr. Elmer L. Henderson, President and Chairman of the Campaign Coordinating Committee reviewed legislation affecting medicine and Dr. John W. Cline, President-elect, reported on the results of the doctors' campaign on public thinking.

I think to counteract some of the fantastic claims of our opponents relating to expenditures by AMA during its gigantic advertising campaign in October of this year, it might be well for all of us to review the facts. The total expenditure born by the doctors for this purpose was $1,100,000, reaching an audience through the media of 10,300 newspapers and Sunday supplements with a circulation of 115,630,487; 55 national magazines with a circulation of 55,202,080 and 1,600 radio stations reaching an estimated 108,205,034. The total number of individual advertisers taking part who bought space in their local newspapers or time on radio stations expressing their conviction that the voluntary way is the American way was 65,246, subscribing to a total of 1,186,594 inches of newspaper advertising space and spent a total of $2,019,849, including 35,362 radio spots, direct mailing, posters, billboards and television programs, which is, of course, exclusive of the amount spent by the doctors and represented their voluntary contribution in behalf of American Freedom.

Dr. Ernest E. Irons, Past President of the AMA, spoke on "The Challenge Ahead," followed by an address on "The Public Significance of Medicine's Advertising Campaign" by Leone Baxter, General Manager of the National Education Campaign.

Dr. R. B. Robbins, Vice-President of AMA, was moderator of a panel talk on "State Participation in Medicine's National Campaign" by James A. Waggener, Field Secretary, Indiana State Medical Association; Leo Brown, Public Relations Director, Pennsylvania State Medical Society; Charles Lively, Executive Secretary, West Virginia State Medical Association; and M. C. Smith, Executive Secretary, Nebraska State Medical Association. Following was an address by Clem Whitaker, Director of the Na-

tional Education Campaign, on "Medicine's may be briefly summed up in two major points, (1) to continue unrelentingly the endorsement drive, and (2) seek the understanding, coopera-Campaign Objectives for 1951," which I believe tion and support of labor to join the ranks of those opposed to the further socialization of our country and for the restoration of the American Way of life.

As a dramatic step toward this end an address by William L. Hutcheson, General President, United Brotherhood of Carpenters and Joiners of America and Vice-President of the American Federation of Labor, entitled: "Socialized Medicine Is No Bargain," was delivered. It was stated that at its general convention recently held a resolution supporting the National Health Program was voted down by some 300 delegates representing better than 54% of the total membership. Mr. Hutcheson concluded "I have always respected the medical profession for the fine contribution American medicine has made to human welfare. As I watched your battle against regimentation during the past two years, I have added to that respect. The physicians of this country have shown that they are willing to fight for their convictions. I salute you today not only as doctors, but as crusading citizens as well. We in the labor movement have our own cross of regimentation to bear. The fight you are making is part of the same war. It is a war against concentration of authority in a few hands in Washington. As a veteran of 40 years in the labor movement, I know what it is to fight for human rights. I am happy to take my stand beside you."

Respectfully submitted,
ROBERT CARPENTER,
Executive Secretary

PHOENIX CLINICAL CLUB
MASSACHUSETTS GENERAL HOSPITAL
M.G.H. CASE No. 31102

The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

A seventy-seven-year-old widow entered the hospital because of marked dyspnea, abdominal distention and tenderness in the right upper quadrant.

Nine years before admission she had a subtotal thyroidectomy for nontoxic goiter, 140 mg. of tissue having been removed. The pathological report was "hyperinvolution." After recovery she lived at a home for aged women, where her activities were limited. Five years before admission she received some medical attention for "gall-bladder trouble" and "a heart condition." She had at that time only shortness of breath and could not take digitalis because this caused vomiting. She spent nine weeks in bed and was well thereafter. Three months before admission she began having pain in the right upper quadrant, which came on only after lying in bed. This pain lasted up to two hours, varied in severity and had no relation to food or exertion. Long-standing constipation became accentuated and required an additional laxative tablet each day. Four days before admission she entered the Emergency Ward because of painful migratory arthritis involving both feet and the right hand. Physical examination at that time and X-ray study were consistent with rheumatoid arthritis. She was discharged to the Out Patient Department. One day before admission, distention of the abdomen began after an unsuccessful enema had been given and the patient's dypsnea increased. Repeated enemas resulted in several loose movements, without relief of the distention or the dyspnea. On the day of admission she had two episodes of vomiting.

Physical examination revealed a dyspneic woman in moderate discomfort but without pain. The lips, ears and mucous membranes were cyanotic. The heart was not enlarged, and the sounds were normal. The neck veins were slightly distended and pulsating. Bilateral crackling basal rales were heard, and in the same areas there was increased dullness to percussion. There was no peripheral edema. The abdomen was markedly distended and tympanitic. Peristalsis was diminished. There was tenderness in the right upper quadrant. No abdominal splinting or masses were noted. Rectal examination was negative. The rectum was filled with soft,

tan feces, which were guaiac negative.

The rectal temperature was 100°F., the pulse 84, and the respirations 20. The blood pressure was 168 systolic, 80 diastolic.

Examination of the blood revealed a red-cell count of 3,800,000 with 10.5 gm. of hemoglobin, and a white-cell count of 16,000 with 91 per cent neutrophils. The urine was acid and had a specific gravity of 1.016, with a four plus test for albumin and occasional white cells and casts. The Bence-Jones protein was negative. The serum nonprotein nitrogen was 42 mg. per 100 cc., and the total protein 5.8 gm., with an albumin-globulin ratio of 1.1. The carbon dioxide and chloride levels were normal. The phosphorus was 1.4 mg. per 100 cc., and the alkaline phosphatase 10.6 Bodansky units.

X-ray films of the chest showed mottled areas of increased density scattered throughout the lungs. The vascular shadows were increased in size. The heart was prominent in the region of the left ventricle, and the aorta tortuous. Films of the abdomen showed considerable gas in the small and large bowel, neither of which appeared to be dilated. There was a laminated gallstone in the region of the gall bladder. No abnormal soft-tissue masses were seen. An electrocardiogram showed normal rhythm at a rate of 75, a PR interval of 0.16 second, a flat T_1, upright T_2 and T_3 and a diphasic T_4, with a sagging ST_4. The patient was digitalized with Cedilanid and was given sulfadiazine. On the second hospital day the patient was considerably improved and was no longer orthopneic, dyspneic or cyanotic; the lungs had cleared but a few patches of fine rales persisted at both bases posteriorly. The abdominal distention was diminished, and the two masses in the right upper quadrant could be felt 5 to 7 cm. below the costal margin. These were not tender and descended with inspiration; they were thought to be due to a coarsely irregular liver edge. The sulfadiazine level was maintained at about 10 mg. per 100 cc., with an intake of about 1250 cc. and an output of about 1000 cc.

At 12:30 a.m. on the fifth hospital day she had an episode of steady precordial pain with gradual onset. Moderately severe orthopnea, with a respiratory rate of 40, lasted for about twenty minutes. Repeated electrocardiograms showed inverted T_1, T_2 and T_3 and a sagging of all ST segments. X-ray films of the chest on the same day showed that the mottled areas of increased density previously described had cleared considerably. Only moderate congestion of the vessels was noted, and no infarcts were seen in the posteroanterior view. The nocturnal dyspnea recurred during the succeeding two nights. There was no increase in the pulmonary rales.

A bomsulfalein test on the fifth hospital day, using 5 mg. of the dye per kilogram of body weight, showed 80 per cent retention in forty-five minutes. A van den Bergh test was normal. An aspiration biopsy of the liver showed no abnormality. The cephalin flocculation test was one plus in forty-eight hours. A barium enema was negative.

The white-cell count rose steadily and reached 31,400 on the eleventh hospital day, with 75 per cent neutrophils, 5 per cent lymphocytes, 4 per cent eosinophils and 16 per cent large monocytes. A low-grade fever (99 to 100°F.) and anemia persisted. The stools were brown and formed. The urine persisted in showing a three plus to a four plus test for albumin and a specific gravity of 1.006 to 1.020.

On the twelfth day the patient suddenly had an attack of acute pulmonary edema, for which she was treated with tourniquets, morphine, Cedilanid and, finally, venesection. She rallied but developed peripheral edema. She became incontinent, with slowly increasing depression and unresponsiveness, and died on the twenty-third hospital day.

DR. M. W. MERRILL

We are considering today a most interesting clinical problem. That of a 77 year old widow who was admitted to the hospital acutely ill, and died 23 days later.

The past history is of some value in the discussion. She had a non toxic goitre removed nine years before admission, was known to have chronic gall bladder disease, and five years previously had been in bed nine weeks, apparently from some type of cardiac disease. This was characterized by shortness of breath and inability to tolerate Digitalis. The patient apparently made a good recovery from the illness, remaining well until 3 months before admission. During this 3 months period prior to entry, constipation increased pain which came on while prone, located in the right upper quadrant, developed and the patient began to suffer from what was apparently an acute rheumatoid arthritis. The day before admission the patient began to develop abdominal distension and dyspnoea follow-

ing an enema. Successive bowel irrigations produced loose bowel movements, but failed to relieve the distension or shortness of breath. On the day she entered the hospital the patient vomited several times.

On admission the patient was dyspnoeic and cyanotic, uncomfortable but in no severe pain. Abdominal distension was marked and bowel was tympanitic with diminished sounds. The heart was not enlarged, but the neck veins were distended and pulsating indicating some pulmonary hypertension. Rales and areas of increased dullness were noted in the chest. There was tenderness in the right upper quadrant, but no masses were felt in the abdomen. Rectal examination was negative. The temperature on admission was 100 degrees rectally, the pulse 84, the respirations 20, the blood pressure 168/80.

The laboratory work showed a leucocytosis of 16,000 with a predominance of neutrophiles, 91%. The urine contained albumin, casts, white blood cells but no Bence-Jones protein. The NPN was mildly elevated to 42 mgms. and the total serum protein was 5.8 grams, very slightly under the lower limit of normal. There was a tendency toward the reversal of the A/G ratio. The carbon dioxide, chlorides, phosphorus were all normal, but the alkaline phosphotase was elevated to 10.6 Bonansky units.

The chest X-ray on admission showed mottled areas of increased density throughout the lung with some increase in the vascular shadows. In the physical examination the heart was reported as not enlarged and the X-rays showed only a prominence in the region of the left ventricle. I take it from this that the heart was actually not much enlarged and believe that this is an important finding in the differential diagnosis.

The films also showed gas in both the large and small bowel and apparently without much dilatation. This must be considered as an ileus and not as an obstructive phenomenon. There was also a large laminated gall stone visible but no abnormal soft tissue masses could be seen.

Electrocardiographic tracing with a flat T_1 indicated most likely an old coronary occlusion. We are probably justified from these findings in concluding that the cardiac disease five years before was probably on this basis.

After admission to the hospital the patient responded well to Sulfadiazine and Cedalanid. The dyspnoea and orthopnoea disappeared, and she was no longer cyanotic. The abdominal distension went down and two masses became palpable in the right upper quadrant. These were non-tender, decreased with inspiration and were felt to be due to liver enlargement.

One should probably stop at this point and try to analyze just what was going on when the patient entered the hospital. However I think it may be preferable to complete a summary of the clinical course. On the 5th hospital day she developed steady precordial pain with some orthopnoea for a while and increased respirations. E.K.G.s were taken serially and showed an inversion of T_1, T_2 and T_3 and a sagging of all of the SD segments. This probably indicated multiple infarctions or a laterally placed lesion. Acute pericarditis must be thought of in connection with these findings, but here the SD segments should remain elevated. The X-rays were again repeated and showed considerable clearing of the mottled densities and no evidence of pulmonary infarction. There was no increase in the pulmonary rales. Remainder of her clinical course was characterized by the development of an acute left ventricular failure on the 12th hospital day, the development of a peripheral adema, and the gradual decline to death on the 23rd day.

Attention should be called to several of the other laboratory findings. Of most importance was the steady climb of the white blood count to 31,400 with 75% neutrophiles, 5% lymphocytes, 16 monocytes and 4% eosinophilia. The latter point may help in the differential diagnosis. Fever was never prominent throughout the course of the illness, anemia remained present, the stools were brown and formed, and the urine consistently ran a 3 to 4 plus test for albumin.

A liver biopsy was done and the tissue obtained was normal. On a bromsulphalein test, 80% retention in 45 minutes indicated a chronic liver disease, and the cephalin flocculation test, 1 plus in 48 hours, indicated no hepatic process.

Colon X-rays were normal and apparently a G.I. Series was not done.

In attempting to diagnose this patient's basic pathology, consideration must be first given to her cardiovascular system. Was she in cardiac failure on admission? She was cyanotic, dyspnoeic and orthopnoeic. However, much of this could have been due to the patient's distension and we must remember that this was bowel distension and not ascitic fluid. Part of her respiratory difficulties probably were due also to pul-

monary findings which suggested a patchy pneumonitis of a rather acute character. The subsequent rather rapid clearing of the lung fields bear this out. In the absence of cardiac enlargement, peripheral adema or ascites, and with a pulse of 84 and a normal blood pressure, I think that we must consider that cardiac pathology was not the primary cause of her trouble on admission. A circulation time would have been of great value here. Later however, I feel sure that she developed probably a coronary occlusion with infarction and subsequent ventricular failure which ultimately led to her demise. I rather think that the Sulfadiazine with its action on the pneumonitis contributed more than the Cedalanid to her progress the first few days of her admission.

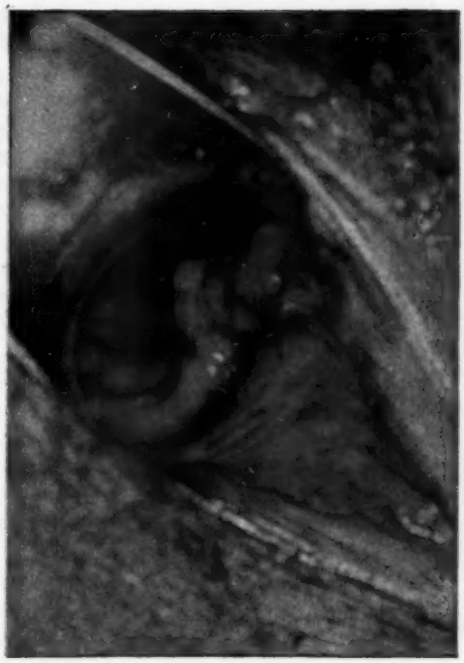
Was there some acute or chronic intra-abdominal condition behind a lot of this patient's difficulty? We know she had a chronic gall bladder disease with at least one calculus, but nothing indicated that she had an acute cholecystitis. In this connection, pancreatitis in a chronic recurring form must be thought of. Inasmuch as there was no abdominal pain and her abdominal symptoms and distension subsided rather quickly, and in the absence of any confirmatory laboratory work, I am inclined to disregard this as much of a factor.

What about this patient's liver—how much did it contribute to her clinical picture. We pretty well know that it was not the seat of an acute process. She had no jaundice, stools were not acolic and cephalin flocculation did not indicate an acute condition. On the other hand, we are fairly certain that she had a chronic liver disturbance. The bromsulphalein retention test, the apparent liver enlargement, the lowered serum protein, the tendency to inversion of the A/G ratio, and the moderate increase in the alkaline phosphotase activity all point to a chronic liver disease. What this was is not clear. The liver biopsy did not help. Apparently it was not on a chronic congestive basis. I cannot rule out metastatic malignant infiltration. This could have been missed in the biopsy. Primary carcinoma must also be thought of, but this could hardly have been in the ductless system with no evidence of jaundice. A chronic hepatitis, or possibly a cirrhosis should be considered, but one would think that the liver biopsy would have established whether either of these diagnosis. I believe the palpable abdominal masses were probably liver or liver and gall bladder. In the presence of a calculus, a large, distended palpable gall bladder is a possibility. The possibility of this being a carcinoma of the gall bladder must also be strongly considered. In the absence of a G. I. Series, or symptoms suggesting gastrointestinal disease, we must conclude the palpable masses were probably not in the stomach or the bowel. As noted, the barium enema was negative. Also we must keep in mind that these masses moved down with respiration which would rule out retroperitoneal lesions. Renal tumor must be considered, but the mass was intraabdominal, below the costal margin, and not in the flank. No I.V. Pyelogram is reported.

The blood picture is somewhat confusing. I can readily explain the moderate degree of secondary anemia which persisted throughout her illness on the basis of age and nutritional deficiency. The white blood picture is a different matter. The pneumonitis, if such it were, on admission could well have been behind a 16,000 count but what was behind the elevation to 31,400 with 75% polys and including 4 eosinophiles? No mention is made of chills or a high temperature elevation to indicate an abscess or other severe suppurative infection. The picture is not that of a leukemia with a preponderance of polymorphonuclears. Another point is the eosinophilia. This is not high but definitely present. The unusually high white count even the normally present eosiniphilia disappears, but in this case it comes on after the patient's admission to the hospital and despite a steadily rising white blood count. One wonders if any of the treatment given could have been a factor.

While discussing the eosiniphilia, one must consider paresites, but I will mention them only to say that there is nothing in the information given to substantiate this diagnosis.

In a generalized carcinomatosis a white blood count is often seen. I do not believe that it is possible to rule out a malignancy in this case. Neither do I believe that it is possible to localize it even if it be present. I strongly suspect that if it is present it is in the right upper quadrant of the abdomen and possibly in the gall bladder. We have considered the G. I. System, the hepatic system, and have mentioned renal tumors. There is no substantial evidence pointing to an accurate localization in any of these structures or in the skeletal structures. We must also consider the pulmonary findings: mottled areas of increased



Photographs courtesy of Louis H. Block, M. D., Chicago

a. Ulcerative amebiasis during Diodoquin therapy. In this patient with severe hemorrhage, edema and necrosis, the ulcers show healing, with many scars. No active lesions are seen.

b. Three months later, after continuing Diodoquin therapy, extensive scarring indicates healing. Inflammation is further reduced and only superficial areas of inflammation remain.

density on admission. These subsided to a considerable extent rather rapidly, probably because of the chemotherapy. This does not sound like malignant invasion of the lungs, and neither does the X-ray description. However, neither does it definitely rule it out.

I believe we must seriously consider periarteritis nodosa as a principal factor in this patient's illness. This condition is being recognized more and more frequently as its relationship to Sulfa sensitivity has been well established. In our case it could account for many of the findings. The renal picture with the continual finding of urinary albumin could be explained on the basis of involvement of the renal arteries by this process. Some type of a chronic nephritis was present and periarteritis nodosa is a possibility. The abdominal distension in the patient had on admission possibly was aggravated by this process in the mesenteric vessels. Surely the distension was not produced by the actual mesenteric thrombosis, recovery was too quick for this to have been the case. Could not the coronary accident have been the result of periarteritis nodosa? It is not well known that this pathological process when it involves the coronary vessels can lead to a vascular occlusion and infarction.

The confusing white blood count and the eosinophilia and the absence of a high temperature, chills and other evidence of a suppurative process can be explained on the basis of the inflammary reaction of a widespread endarteritis. The eosinophilia which made its appearance could easily have been caused by an exacerbation of this disease. One must also consider the elevation of the white blood count which follows coronary occlusion. I am assured that it is in massive occlusions, this elevation might be present on the second day, but very unlikely to climb to 31,000 six days after the accident as is noted in the protocal. Neither can an occlusion with an infarction explain the appearance of the eosinophiles.

I would like to submit this for your consideration. The elderly lady was admitted with distension and a pneumonitis. Sulfadiazine was vigorously administered and five days later her lung findings were better. However, she develops a coronary and seven days after this she goes into an acute cardiac failure. She then goes steadily down hill and dies. If she had a periarteritis nodosa on admission to do a previous sulfa sensitivity, and who might not have in this day of chemotherapy, the administration of further sulfa might well have produced an acute inflammatory exacerbation of the process. My first diagnosis will then be coronary occlusion with infarction and subsequent cardiac failure, and a chronic nephritis with periarteritis nosoda as the basic pathology. Secondly, generalized carcinomatosis, the primary seat of which is unknown with gall bladder being a possibility.

DIFFERENTIAL DIAGNOSIS

Dr. Reed Harwood: Whatever else we are dealing with in this case it is evident that the patient had congestive heart failure. I think that two questions should be considered—first, the type of heart disease that was responsible for the failure and, second whether any further disease contributed to her death.

Nine years before admission she had a subtotal thyroidectomy. This raises the question of myxedema. If she did have myxedema it is not evident from the record.

Four days before admission she came to the Emergency Ward, complaining of painful migratory arthritis. It is unusual but not impossible to see acute rheumatic fever in a person of this age; I have seen it in persons of fifty years. One would expect, however, to find an increased PR interval in the electrocardiogram and to have more statements about her joints after she was admitted to the hospital.

The low-grade fever and the anemia suggest a subacute bacterial endocarditis, but I consider that as remote. She was an old woman who had a moderate hypertension. The X-ray films showed some enlargement of the left ventricle, and I think it is likely that she had hypertensive heart disease. At her age it is reasonable to expect that she had sclerosis of the coronary arteries. I suggest that she had a combination of hypertensive and arteriosclerotic heart disease.

The initial electrocardiogram was not strikingly abnormal, and I am interested to see if the changes that took place were consistent with an infarct. She was given digitalis, and we therefore expect to find sagging of the ST segments. I cannot say with complete confidence, however, that these tracings are consistent with an infarct. But since, following the attack of precordial pain, there was a definite change in CF_4, it seems extremely likely that she had a myocardial infarct.

In answer to the first question, that is, the type

of heart disease responsible for failure, I believe that she had hypertensive and arteriosclerotic heart disease, with a small myocardial infarction while she was in the hospital.

Did she have anything else that contributed to her death? She had abdominal pain and constipation shortly before admission; she was found to have a secondary anemia and a persistent 4 plus test for albumin, without striking abnormalities in the urinary sediment. The attending physicians evidently considered the possibility of multiple myeloma because of the marked albuminuria and anemia but the test for Bence-Jones protein was negative and the serum protein was not markedly increased. I do not believe that this entirely rules out multiple myeloma, but at least the evidence is against it. It was found that she had a phosphorus of 1.4 mg. per cc. and an alkaline phosphatase of 10.6 Bodansky units, both of which are abnormal figures. The only condition that I know of in which the phosphorus is reduced to such a low figure is hyperparathyroidism, but that may be ignorance on my part. If at post-mortem examination and adenoma of the parathyroid gland was found. I should be willing to give the opinion now that it did not contribute to her death. I am inclined to think that she did not have an adenoma, because there is so little evidence to go with it. The alkaline phosphatase was definitely increased, which suggests some disease of the bone in which the osteoblastic activity is increased. Once again one thinks of hyperparathyroidiam, Pagets disease or some type of malignant disease involving the bone.

Another finding is the presence of two masses in the right upper quadrant. For lack of a better explanation I decided that she had a liver that was probably engorged from early right-sided failure of the heart and a chronically inflamed gall bladder. Both masses were rather low in the abdomen, at least four finger-breaths below the costal margin. She might conceivably have had a diseased kidney on that side.

We next come to the consideration of disease of the liver, about which there are many contradictory data. Evidently the attending physicians thought that she had liver disease. They did a bromsulfalein test on the day that she had acute left ventricular failure and found that she had 80 per cent retention. At the same time a van den Bergh test was normal. A biopsy of the liver was normal, and a cephalin flocculation test was not definitely abnormal. The serum protein level and the albumin-globulin ratio were normal. With all this negative evidence I am going to disregard the bromsulfalein test or at least not give it undue importance. I do not know what happens to the bromsulfalein test in cases of congestive failure, but it is at least possible that during acute congestive failure more of the dye would be retained.

Finally, there was a peculiar reaction of the bone marrow, which had produced a leukocytosis by the twelfth hospital day. I should like to know about some of the other white-cell counts and differentials during the preceding interval.

Dr. Benjamin Castleman: On admission, the white-cell count was 16,000; subsequently, it was 13,000, 18,000, 23,000 and 31,000 on the tenth day it was 32,000 and then 18,000 and 32,000. In the differential counts the neutrophils ranged from 91 to 74 per cent, and then from 71 to 77 per cent.

Dr. Harwood: When did the monocytosis appear?

Dr. Castlemen: On the tenth day, there were 5 small lymphocytes and 3 monocytosis; on the fifteenth day, 5 small lymphocytes, 6 large lymphocytes and 3 monocytes; three days later, 4 large lymphocytes, 9 small lymphocytes and 8 monocytes with 2 myelocytes.

Dr. Wyman Richardson: There were numerous smears interpreted by different persons.

Dr. James A. Roth: The monocytes were not typical. They were large mononuclear cells, which I could not classify. They stained light blue.

Dr. Harwood: I should like to ask Dr. Schulz if there is anything in the chest plate to suggest any disease other than congestive failure.

Dr. Milford Schulz: The pulmonary markings are prominent. They do not look just like the prominent markings that are seen with lymphatic spread of a tumor. There is not much fluid in the chest. In the lateral view there is a triangular shadow in the posterior gutter that could indicate an infarct, but it is not entirely characteristic.

Dr. Harwood: Do you want to say anything about the bones?

Dr. Schulz: All the bones are decalcified but no more than one would expect in a person of her age. There is no evidence of cysts, and no change in the vertebral bodies. There are old

arthritic changes in the hands and feet. I do not see any localized areas of destruction.

Dr. Harwood: Is there anything suggestive of miliary tuberculosis in the lungs?

Dr. Schulz: The picture is not consistent with that of miliary tuberculosis. Lungs that look like this are disturbing. One thinks of passive congestion, early lymphatic spread of malignant disease, pulmonary fibrosis and even miliary tuberculosis; something similar is often seen in diseases like periarteritis nodosa.

Dr. Harwood: Do you see anything in the lungs that suggests the need for sulfadiazine? The temperature was 100°F. when the patient came in, and she had a high white-cell count. There is nothing in the record, however, to give me a clue why sulfadiazine was necessary, and this raises the question why patients have to be treated with some kind of chemical. We know that occasionally a fever subsides without their use, and I doubt that this patient needed sulfadiazine. I shall proceed, leaving that statement for what it is worth.

To go on with the discussion, I think that some other disease besides heart disease was found post mortem. I have no idea what, but the evidence points to a lesion that involved bone. I should think, first of all, of a malignant tumor with widespread metastasis, including involvement of the lungs. The original site of such a tumor I cannot determine. It may have been the thyroid gland, that gall bladder or some other intra-abdominal organ.

Another possibility is miliary tuberculosis. The evidence for this is not striking. I also thought of the possibility of some acute intra-abdominal catastrophe to explain the increasingly high white-cell counts, such as thrombosis or embolus of some vessel or perhaps perforation of the gall bladder. I remember a patient with carcinoma of the prostate who developed a high fever and chills. I thought that he had a kidney infection, but at post-mortem examination we found that the gall bladder had ruptured into the bed of the liver, discharging a hundred or more small stones. It was an entirely unsuspected finding. In the present case, I also thought of the possibility of disease in the liver. The likeliest lesion would be a metastatic carcinoma.

Dr. Richardson: I did not see this patient, but I did see a blood smear taken at about the midpoint of her illness. At that time she had received sulfadiazine for some time. The picture was that of a considerable degree of leukocytosis. There was no evidence of infection from the smear. There were some peculiar cells, which might have been very immature red cells, and I thought that the whole picture might have been due to sulfonamide therapy. Sulfonamides had been stopped, however, a few days previously, but still the total white-cell count remained elevated. There was also red-cell regeneration. I wrote in my note that since the picture had continued after the stopping of sulfonamides it was quite consistent with involvement of the bone marrow, presumably by a malignant tumor that had also produced considerable anemia. There were no toxic changes such as are usually seen in uremia, nor was it hypochromic by measurement. It was a "simple anemia" but must be explained somehow.

Not knowing the answer in this case, I should say that the patient probably had malignant involvement of the bone marrow. The possibility of myeloma should be considered. Those queer cells might conceivably have been immature plasma cells.

Dr. Chester M. Jones: I should like to take minor exception to one statement that Dr. Harwood made, namely that an elevated phosphatase means disease of bone. That is not correct because an elevation of the phosphatase level may also occur in liver disease and may be as high or higher than that noted in involvement of bone.

Dr. Harwood: Is that true in patients without jaundice?

Dr. Jones: Yes.

Dr. Harwood was entirely right in stating that the elevation of the bromsulfalein retention could be explained by congestive failure. No doubt one could observe dye retention, positive cephalin flocculation and Takata Ara tests and at least some change in the albumin-globulin ratio as a temporary episode occurring with congestive failure. On the other hand, 80 per cent retention in forty-five minutes is extremely high.

I do not recall this case too well, since the patient came in at a time when I was out of the hospital for a few days. I do recall, however, that we entertained the thought of metastatic cancer of the liver as a real possibility and that is why the biopsy was done. The fact that nothing was found on aspiration biopsy is no proof

against its existence. One can miss a nodule very easily.

CLINICAL DIAGNOSIS

Metastatic carcinoma to lungs and liver?

DR. HARWOOD'S DIAGNOSES

Hypertensive and arteriosclerotic heart disease, with congestive failure.

Carcinoma of gall bladder or thyroid gland, with metastases to bone marrow.

ANATOMICAL DIAGNOSES

Carcinoma of gall bladder, with extension into liver and with metastases to lung, liver, peritoneum and bone marrow.

Cardiac hypertrophy, hypertensive type, slight.

Cholelithiasis.

Hydrothoraz, slight, bilateral.

PATHOLOGICAL DISCUSSION

Dr. Castleman: The post mortem examination disclosed a heart weighing over 400 gm., with slight hypertrophy of the left ventricular wall, which is consistent with a mild hypertensive heart. There was no infarction, and the coronary arteries were only slightly sclerotic. We found no real evidence of heart failure. There was about 50 cc. of fluid in both pleural cavities. The liver showed no evidence of chronic passive congestion, but it was enlarged. In the region of the gall bladder was a mass about 6 or 8 cm. in diameter that completely replaced the gall bladder and that looked like carcinoma. It extended into the liver substance for about 4 or 5 cm. In cutting through this mass we found a gall-stone embedded within. Microscopic sections revealed that this was a primary carcinoma of the gall bladder. The increase in pulmonary markings was due to metastatic carcinoma.

Dr. Richardson: What about the bone marrow?

Dr. Castleman: There were also metastases to the peritoneum and to the bone marrow.

Dr. Schulz: Was the entire bone marrow replaced.

Dr. Castleman: We have not seen enough sections to say, but the one section that I examined certainly showed extensive involvement.

Dr. Jones: This woman was given sulfonamides with the idea that she had a bacterial pneumonia.

TOPICS OF CURRENT MEDICAL INTEREST

RX, DX, AND DRS.

By GUILLERMO OSLER, M.D.

Several materials have suddenly become available for the LYSIS OF NECROTIC TISSUES in empyema and other suppurating spaces. Streptokinase and streptodornase are being used on trial; they are obtained as fractions from cultures of a fungus. The enzyme Trypsin, produced by the pancreas, has also been found effective by Roettig and Curtis of Ohio State. . . . We have used the streptos on our first case of empyema. The signs of action (fever, pain, malaise) were brief and exactly as described. The fluid thinned and the evidence of necrosis decreased. The drug is said to have no effect on living tissue. . . . The perfect substance is probably in the future, but seems to be on the way.

More than a year ago this column contained the suggestion that Kendall and Hench would be good bets for a NOBEL PRIZE. . . . Because nobody else will remember that prediction, we now mention that they got it. . . . Minor point: the current Osler has no influence with the prize committee.

NEWS ABOUT NEWS SOURCES—A new medical journal will make its first appearance about now, January 1951. 'ANTIBIOTICS' will be published monthly by the Washington Institute of Medicine, with Dr. Henry Welch as editor, and all the leading authorities (fifty) as assistants,—Fleming, Waksman, Dubos, Finland, Keefer, Perrin Long, Woodward, Youmans, etc. . . . The AMERICAN JOURNAL OF NURSING has passed its fiftieth birthday, and should be read by every physician once a year, just for perspective. . . . The Health Information Foundation is potentially quite an outfit. It expects to work on unsolved diseases, improve the nation's health, collate and dispense information, and study such problems as health insurance. Officials from all of the leading drug manufacturing companies compose the membership. It also has potent sub-committees.

The Upjohn Company has A NEW PENICILLIN which can be used in cases where sensitivity develops to penicillin G. It is called 'Cer-O-Cillin', (or penicillin O), and the 'O' is derived from the smell, which is onion-like. . . . Oddly, when the

penicillin O has been given for a few days, it is said that penicillin G may again be used without a return of the allergic signs or symptoms. . . . Added note,—they have one type of penicillin, NOT on sale, which the lab calls 'penicillin S', for skunk.

Anaesthetists, hospital residents, and other experimenters, are enthusiastic about the NEW TINY PLASTIC TUBING (polyethylene) for intravenous and other uses. . . . For giving continuous fluids into a vein a tube may be fitted OVER a 19 gauge needle and INTO a 15 gauge needle. This combination is inserted into a little-used vessel, both needles are then withdrawn, and the tubing may be used and closed as desired. . . . It has also been used for intraspinal drugs, intraperitoneal drainage, and whatever else you can think of. It is flexible and transparent, and is most useful in children, irrational patients, the elderly, etc.

BOOKS-OF-THE-MONTH.—1. 'STRESS' by Dr. Hans Selye. . . . The book contains information on the currently important theory by which the adrenal responds to demands for function. . . . The stress sets off a reaction which produces 'desoxocortisone', which is the common cause of such ills as hypertension, rheumatoid arthritis, etc. . . . 'Strain' is the emotion which physicians will feel when they see the price of the book—$14.00.

2. The numerous contributions of Tucson's W. Paul Holbrook and Donald E. Hill have been expanded to a 'MANUAL OF RHEUMATIC DISEASES'. It is a small book of 190 pages, with 119 illustrations, and is published by The Year Book Publishers, Inc., of Chicago. . . . The reviews are good, tho most of the comments so far are from the publisher and top-notch book-sellers. Year Book says "a practical, down-to-the-minute manual". Stacey's of San Francisco says, among other things "A concise, excellent presentation. . . . worthy of emulation in other medical fields."

Data are slow to gather and reach print on THE EFFECTS OF ADRENAL CORTICOID MATERIALS ON TUBERCULOSIS. The first brief reports were paradoxically clinical instead of experimental. . . . It is important to know the effects in order to answer several questions. Does cortisone or ACTH help tuberculosis? Does it aggravate tuberculosis if given for a real indication in the presence of clinical tuberculosis? Will it activate an inactive tuberculous lesion? . . . Dr. Emil Bogen, who visits this column at intervals, led a discussion on the subject at the Los Angeles Trudeau Society in late November. He used his animal inoculation work and a pair of cases to bring out other similarly small series from the audience. Correspondence from Philadelphia and other eastern sources was also mentioned. . . . There are discrepancies and contradictions, but A FEW POINTS ARE NOTABLE,—(1) Symptoms of pulmonary tuberculosis are decreased, often greatly. (2) X-ray signs do not change, especially in chronic disease. (3) The hormones do not affect fibrosis which is already formed. (4) Tuberculin sensitivity may seem to be lost, but is probably decreased, and may vary during a series of several tests. (5) Streptomycin is effective during use of hormones, but less rather than more (as was hoped). (6) A worsening of the disease may follow discontinuance of the hormones, and certain species of animals may become more susceptible during usage. (7) Cortisone has no known effect on tubercle bacilli in vitro. (8) Therapy in silicosis would seem hazardous, because of a possible cryptic tuberculosis. (9) The effect of the hormones on animals inoculated with BCG is being studied. (10) Therapy of arthritis, etc., in the presence of tb., should proceed with caution, and only when necessary.

The MODE OF CORTISONE ACTION should become less secret soon. A radioactive form is now available for research. . . . Cortisone has been combined with tritium, a radioisotope of hydrogen. The drug was synthesized by Dr. T. Gallagher and colleagues at the Sloan-Kettering Institute in New York.

The Tumult over the importance of VENOUS THROMBOSIS persists, even tho the Shouting over the value of some of its therapy dies. . . . Such top-rank researchers and surgeons as Geza de Takats and Alton Ochsner are concerned over the frequency of thrombosis and its complications, while being disenchanted with anticoagulants and even proximal vein ligation. The latter is a chore; the former (especially dicoumarol) are hazardous; and both are not widely effective, they say. . . . Ochsner and Kay's use of alpha tochophreol for thrombosis is aimed at increasing the blood antithrombin level, so that it may be in balance with prothrombin, so that clotting will not result. . . . We will have to wait and see.

RATS are still menaces to health and foes of medicine. Progress has been made in control efforts since the days of Zinsser's book about rats, lice, and fleas, but the balance is not much on our side. . . . Prof. Karl Link (who has several relatives in Tucson) has continued to invent drugs at the University of Wisconsin, and one of them may shift the balance against rodents. First it was 'Dicumarol', now it is 'WARFARIN'. . . . The new drug has a similar formula, but it is nearly perfect as a rat poison. Rats will avoid drugs which they suspect to be death-dealing. 'Warfarin' does not cause suspicion, since it must be eaten repeatedly over a period of days, then causes drowsiness, ataxia, and death by internal hemorrhage, not near the source of food. . . . Humans and

pets are protected from over-dosage by the need for repeated ingestion and the size of the dose.

UNIVERSITY NEWS ITEMS,—The College of Pharmacy at the U. of A. has a new Dean. . . . The school was founded about two years ago by a retired Dean from Nebraska. He got the curriculum started, and now gives way to DR. HAAKON BANG. . . . Dr. Bang has been on the faculty at Washington State College since 1932, became a full professor in 1948. He obtained his first two degrees there in 1927 and 1931, and his Ph.D. from Purdue in 1942. . . . He also worked his way thru several commercial pharmacies in Washington, and is now becoming acquainted with the druggists of Arizona. . . . The 'West Coast Druggist' gives all these details, plus a picture.

BED-PANS have always seemed like too much of a chore for a sick-patient, not to mention an obstacle to defecation. . . . Unless the patient is handicapped by a cast or a paralysis or an acute unstable lesion it is easier and safer for him to use a commode or nearby toilet. . . . We have the evidence that most post-op. patients do better up; that many lesions, including most tuberculosis, heal just as well at modified bed-rest; and now the work of McGuire, which shows that the changes in intravascular pressure during use of a bed-pan are a hazard to the heart, the arteries, and the veins. A BAS the bedpan!

The third method for TREATMENT OF ALCOHOLISM which has appeared in the past year is now reported. . . . A type of myanesin called 'Tolserol' (mephanesin by Squibb) may be used for acute alcoholism, in either oral or intravenous doses. . . . It reduces abnormal neuromuscular impulses and has a sedative action without clouding consciousness. Ordinary sedatives may be cut down or out. . . . Side effects follow the I.V. approach, but the decrease in anxiety and jitters in a conscious patient may make it worthwhile.

HOUSE-DUST is somewhat of a mystery as well as a common cause of certain allergic conditions. It is even blamed for canker sores, abnormal fatigue, and other unexplained types of malaise. It is serious in winter, in children, and in areas other than Arizona. . . . The late Doctors Kibler and Watson of Tucson were noted for using house-dust extracts in the therapy of bronchitis. . . . Expensively decorated houses have often been stripped bare to accommodate an allergic member of the family. . . . Now we hear, from medical and non-medical sources, of a preparation called 'DUST-SEAL' which may be applied (without harm, it says here) to such dust-collecting items as furniture, carpetting, mattresses, bedding, curtains, etc. . . . The American Academy of Allergy has labelled it as 'a useful adjunct'. Time will tell the true value (or perhaps it will be Newsweek).

CASE-FINDING by X-ray for tuberculosis, and for other diseases of the heart and lungs, has become 'SITUATIONAL'. . . . The method has long been used in colleges, and is used in an increasing number of medical and nursing schools, in offices and industries, in general hospitals, etc. It is urgently recommended now as a premarital examination—tho this lets it go until pretty late. . . . It is being used on a large scale in towns and cities, but this approach has notable flaws,—those in need of it often avoid it; those in the older age groups avoid it the most often. . . . We suggest here, for the first time, that if persuasion is needed for the olders, X-raying be tied up with something desirable. A written report that an x-ray had been taken could be required, for instance, AT THE TIME OF PENSION APPLICATION.

Sometimes Supply precedes the Demand. . . . Before most of us know much about THE RELATIONSHIP OF LIPIDS AND LIPOPROTEINS TO ATHEROSCLEROSIS (or before ANYONE knows much more), a laboratory in Belmont, California, offers to do the 'Gofman' test, on blood serum which can be sent to them. The concentration of S 10-20 molecules is given in mgms % when the test is positive. . . . If one wishes to pioneer to this extent, it will cost $30.00 per specimen.

1951 CANCER SYMPOSIUM

The Annual 1951 Cancer Symposium will be held in Salt Lake City, Utah,, March 1 and 2.

Through the coordinated efforts of the cancer teaching group of the University of Utah—Medical School, and representatives of the Utah Chapter of the American Cancer Society, a two-day session has been arranged, each presentation being specifically designed to be of value to the practicing physician.

The Speakers: Dr. Buie from Mayo's, Dr. Huggins from Chicago, Dr. Garland from San Francisco, Dr. Bowers from Memphis, Dr. Ackerman from St. Louis, and Dr. Barnes from Columbus, have been carefully selected and are exceptionally qualified for this task. Formal talks will be held to a minimum and will be supplemented by a number of informal conferences, clinics, and seminars; and a televised operation by one of the visiting surgeons has been tentatively scheduled.

With the help and cooperation of auxiliary organizations an attractive entertainment pro-

gram is being planned for the physicians and their wives, to include a fashion show, a dinner dance, and other worthwhile events.

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CURB ON DOCTOR CHANGING?

Reprinted from Glascow Scotland Bulletin

A curb may be put on the right of National Health Service patients in Scotland to change their doctors immediately as the result of an excessive number of changes.

Indicating this in its annual report, the Scottish Association of Executive Councils—whose annual conference will be held in Dumfries next week—says that amending regulations on the subject will probably be made in the near future by the Department of Health for Scotland.

The report says:—"It is suggested that a number of these changes are the result of a doctor conscientiously refusing to give a patient a medical certificate of incapacity or, it may be, refusing to issue a prescription for a medicament which the patient fancies."

While the association's executive committee are anxious that the policy of free choice of a doctor should be preserved, it declares that a doctor should not be penalised for standing up to his conscientious opinion, especially when he was the man to judge whether the patient was fit for work or otherwise, and what was necessary for his proper treatment.

The new regulation proposed by the Department of Health, it is stated, will provide for immediate transfers in the case of patients removing from one district to another or where the doctors concerned consent.

But in other cases the patient will be allowed to transfer only after a fortnight's notice and after he has applied in writing to the executive council and has received permission to transfer.

A resolution to be submitted at the Dumfries conference will suggest that if the 14 days' notice method is adopted it should be only for an experimental period, and that if it fails the patient should be allowed to transfer at the end of a quarter, after giving a months' notice.

GREATER USE OF ANTICOAGULANT DRUGS URGED IN CUTTING HEART DEATHS

New "Clinical Progress" Section of "Circulation" reviews Treatment for Coronary Thrombosis

To help reduce deaths and disability resulting from heart disease, more general use of anticoagulant drugs in the treatment of coronary thrombosis is recommended to physicians by Dr. Irving S. Wright, Professor of Clinical Medicine, Cornell University, New York City. Writing in the new "Clinical Progress" section of "Circulation," the Journal of the American Heart Association, Dr. Wright bases his recommendation on recent controlled experiments with heart patients. He suggests that other drugs recommended for therapy in coronary heart disease be subjected to similarly controlled studies before they are accepted by the medical profession as being of established value.

Dr. Wright's article, entitled "The Modern Treatment of Coronary Thrombosis with Myocardial Infarction," outlines the established therapy for this disorder, including rest, sedatives, alcohol, oxygen, and transfusions, as well as the administration of anticoagulant drugs.

The "Clinical Progress" section of "Circulation," in which the article appears, was inaugurated in the current (December) issue for the purpose of reviewing the latest advances in the cardiovascular field as a guide to physicians. The editor of the new section is Dr. Herrman L. Blumgart, Professor of Medicine, Harvard Medical School.

Dr. Wright describes the use of the anticoagulants, heparin and dicumarol, and mentions the newer anticoagulant drug, tromexan, in the treatment of coronary thrombosis, a form of circulatory disorder that kills at least 200,000 people a year in the United States. He indicates that this figure will increase as the average age of the population continues to rise, thus presenting "a problem of increasing importance in national and community life."

Anticoagulants are used to check the spread of a blood clot, or thrombosis. Coronary thrombosis refers to the formation of a blood clot in one of the coronary arteries supplying the heart. The result of such a coronary thrombosis is the destruction of a part of the heart muscle. This is known to physicians as "myocardial infarction." The condition may be fatal or disabling.

Dr. Wright summarizes the results of a study by a committee of the American Heart Association in which teams in 16 leading hospitals in the United States observed in detail a total

of 1,031 cases that were submitted to careful statistical analysis. Approximately one-half of these received the best available type of treatment used prior to anticoagulant therapy. The other half received anticoagulant therapy in addition. Dr. Wright says the results were strongly in favor of the use of anticoagulants because of a marked reduction in the death rate and an even greater effect in preventing complications that leave patients with serious disabilities.

"On the other hand," Dr. Wright points out, "as is widely recognized, anticoagulant drugs are not without their hazards. They, like other forms of medical treatment, require skill and knowledge of the technique for their use. . . . If anticoagulant therapy is employed with proper care the risks are not excessive.

Emphasizing the seriousness of coronary thrombosis, Dr. Wright says, "it occurs in all ages, but is predominantly encountered in persons over the age of 40. In general, it may be said that coronary thrombosis occurs at an average age which is approximately six years younger in men than in women. More men than women suffer and die from it in every age group under the age of 80. . . . One of the most unfortunate characteristics of this disease is that it strikes down many persons at the height of their productive years and activity, at times when they have the greatest responsibilities toward their communities and their families."

AMERICAN MEDICAL ASSOCIATION AIDS MEDICAL SCHOOLS

Cleveland, December 6—Responding to the challenge voiced by its president, Dr. Elmer L. Henderson of Louisville, Ky., in his address to the House of Delegates yesterday, that the medical profession take the initiative in raising private financing for hard-pressed medical schools, rather than seeking federal subsidies for medical education, the American Medical Association today appropriated a half million dollars as the nucleus of a fund to be raised for the aid of medical schools throughout the Nation.

The half million dollar contribution was voted unanimously by the A.M.A. Board of Trustees and was announced by its chairman, Dr. Louis H. Bauer of Hempstead, New York, at a dramatic, early morning meeting of the Association's House of Delegates today.

Dr. Bauer's statement follows:

"The Board of Trustees of the American Medical Association is pleased to announce to the House of Delegates that it has appropriated a half million dollars out of its National Education Campaign Fund, which was raised to defend medical freedom, for the aid and support of medical schools which are in need of additional financing.

"This fund will be given to the medical schools for their unrestricted use in their basic training of future physicians.

"This appropriation to aid the medical schools has been made possible by the widespread public cooperation which the profession has received from the American people in its campaign against Compulsory Health Insurance. The fight against socialized medicine must go on until this issue has been clearly and finally resolved, but the pressure for regimentation of the medical profession has greatly lessened, due to the magnificent public support which we have received.

"The Board of Trustees, therefore, feels that it is keeping faith with the American people, who have given medicine such a splendid vote of confidence, when it contributes this amount to the medical schools of the National.

"There is growing public awareness that federal subsidy has come to be a burden, not a bounty, for it is bringing intolerable increases in taxation, and is dangerously increasing federal controls over our institutions and the lives of our people.

"American medicine feels very strongly that it should not seek federal aid for medical schools, until all other means of financing have been exhausted. The Board of Trustees announced yesterday its belief that funds for this purpose could be obtained from private sources—and as practical evidence of our sincerity of purpose, this appropriation has been made as the nucleus of a fund which we hope will be greatly augmented by contributions from many other sources.

"The Board hopes that this action will become a stimulus to other professions, industries, businesses, labor groups and private donors to contribute to this very important cause of protecting and advancing the interests of medical education and the public health.

(Continued on page 69)

"SOCIALIZED MEDICINE IS NO BARGAIN"

An address by William L. Hutcheson, General President, United Brotherhood of Carpenters and Joiners of America and Vice President of the American Federation of Labor.

Prepared for delivery at a Joint Session of the House of Delegates of the American Medical Association and the Third Annual Conference of the A.M.A. National Education Campaign, Cleveland, Ohio, Nationwide Broadcast, ABC Network, 4:00 p.m., December 7, 1950.

(Note: Mr. Hutcheson, due to illness, authorized the reading of his address to the Convention by his assistant, Mr. Peter E. Terzick, Editor of "The Carpenter.")

I am against socialized medicine. So is the organization which I have the honor of heading. At the Twenty-sixth General Convention of the United Brotherhood of Carpenters and Joiners of America, held in Cincinnati last September 1, 300 delegates, representing better than 54 per cent of the total membership, voted down a resolution to support the National Health Program. This probably does not jibe with the feelings of a good deal of the rest of the labor movement because much of the pressure for "free" medical care is coming from labor organizations. But it does reflect my sentiments and the sentiments of our recent convention.

Saving a dollar has never been distasteful to me. In fact I like to get as much for my money as the next man. That is one of the reasons why I oppose socialized medicine. It is no bargain. It looks cheap the way the backers present it, but when you dig down under the fancy layer of propaganda frosting you find that it can be mighty expensive. The British people have already discovered this fact. The July issue of International Labour Office, contains some very interesting data on the operation of the National Health Service in Britain. I quote a few lines of that report:

"The total (gross) cost of the National Health Service in 1948-1949, the first year of operation, greatly exceeded the original estimate. This was 265 million pounds, as against a revised estimate of 368 million pounds, with a net cost to the taxpayer of 278 million pounds. The revised estimate for the year 1949-1950 was 450 million pounds as against an original estimate of 352 million pounds. For the 1950-1951, the cost is estimated at 484 million pounds; in 1946 when the Bill was passed, the service was believed to cost 167 million pounds a year."

In case you don't understand what the International Labour Office is, I can best explain its functions by quoting a bit from its preamble:

"The International Labour Office is an association of nations, financed by Governments and democratically controlled by representatives of Governments, of management and of Labour organizations.

"Its purpose is to promote social justice in all countries of the world. To this end it collects facts about labour and social conditions, formulates minimum international standards, and supervises their national application."

The I.L.O.'s publication, "International Labour Review," is published in the United Kingdom. As an international organization, I.L.O.'s findings are supposed to be strictly impartial.

Getting back to the report; if I read it correctly, service that was supposed to cost 167 pounds per year when the plan was set up in 1946 costs 484 million pounds per year, and the end is not yet in sight. By my old-fashioned kind of arithmetic that is an increase of better than 345 per cent and I am sure my poor old mother, who always made a dime do the work of a quarter, would not consider that kind of proposition any bargain.

I know! I know! The socialists claim that money is of no consequence in the matter of national health;—getting the poor the same quality and quantity of medical care as the rich can get under private enterprise is the advertised objective of the National Health Program. That sounds fine, too; but on Page 57 of the I.L.O. report, I find the following sentences:

"Survey of the distribution of doctors by boroughs shows that certain wealthier districts (of London) have an average of one doctor for 1,261 patients, while in the inner East End there are 2,472, or twice as many patients, per doctor. For a group of southern boroughs, the average is 2,897."

If that isn't the "one horse and one rabbit" recipe transferred from the meat pie maker's kitchen to the National Health program, then I need new reading glasses. I have tried to figure it from all angles but the answer I always come up with is that the lumbago, shingles and bellyaches of London's South Siders get only half the attention that similar ailments get in the swankier districts. For all the planning that has

been done, there is still an uneven distribution of doctors in London. If the backers of the National Health Program are to achieve their objective of equal health protection for all, the next step must be to tell doctors when and where and how they are to practice. Therein lies my greatest fear of socialization.

Socialization and death have one thing in common; you cannot be either a little bit socialized or a little bit dead. It is whole hog or nothing. After two years of the National Health Program, London doctors still have preferences as to where they want to practice. By compulsion of one kind or another, somebody is going to have to shoo doctors away from the fancy neighborhoods into the tenement districts or the program will wind up where it started. When the government is given authority to tell one group or one profession where and how its members are to work, no other group or profession can be safe for long.

If the day ever comes to America when Uncle Sam usurps the power to dictate to doctors under a health plan, it will be a sad day for carpenters. Adequate housing is still an unsolved problem in this country, especially for the poor. If it is logical to nationalize the medical profession to get more medical service for the poor, it is equally logical to nationalize the home construction industry to get roofs over the heads of the lower income groups.

I do not know much about doctors, but I know quite a bit about carpenters. They are an independent lot. They want to work where and how they please. The first bureaucrat who told a carpenter he had to work in Little Rock when he wanted to work in Lancaster would be gumming his food for lack of teeth. Carpenters want to be free agents; free to work where they want to; free to negotiate the terms of their wages and working conditions through collective bargaining; yes, even free to leave the industry and try their luck at something else if the spirit moves them.

They will retain these freedoms only so long as all other groups retain theirs. Socialization is like a wolf with a tapeworm; once it starts gnawing, it never can stop. Socialized medicine would only be the first bite out of our free enterprise system; it would not be many years before the carpenters would be feeling the teeth of socialization on the seats of their overalls. Any way you look at it, socialized medicine is no bargain and the carpenters want none of it.

I know that the backers of the national health plan in this country resent the term "socialized medicine." They have all sorts of arguments to "prove" that doctors and patients will remain free as the air under their program. They make a strong case. Perhaps if human nature were less ornery and less avaricious, an idealistic health program might work out all right. But so long as people have preferences, so long as Park Avenue has more appeal than Hell's Kitchen, there will be an uneven distribution of doctors under any plan that does not contain compulsion. And once compulsion enters the picture, the rights and freedoms of all citizens stand in jeopardy. To me, it is as simple as that. For forty years, I have fought communism tooth and toenail because I do not want anyone pushing me around. I certainly do not want to put my head into a socialization noose voluntarily when the results can be as undesirable as communism.

I have always respected the medical profession for the fine contribution American medicine has made to human welfare. As I watched your battle against regimentation during the past two years, I have added to that respect. The physicians of this country have shown that they are willing to fight for their conviction. I salute you today not only as doctors but as crusading citizens as well. We in the labor movement have our own cross of regimentation to bear. The fight you are making is part of the same war. It is a war against concentration of authority in a few hands in Washington. As a veteran of forty years in the labor movement, I know what it is to fight for human rights. I am happy to take my stand beside you.

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BOOK REVIEWS

Santa Claus, M.D. By W. W. Bauer, M.D. Cloth $2.75. Pp 266. The Bobbs-Merrill Company, Inc., Indianapolis—New York. 1950.

Bauer uses a popular style of writing to tell Johnnie Q. Public why the doctors of America favor Freedom in Medicine rather than compulsory health insurance. He de-bunks the phony statistics of the socialist propagandists. He points out clearly the progress in health matters that has come about under the traditional American manner of practicing medicine. He states the American way is best and has led to the highest health standards in the world. ("Swedes live longer in Minnesota than they do in Sweden.")

He (and we) are not, however, satisfied to stand still. More progress in health matters is our aim. Therefore Bauer discusses point by point, a chapter at a time, the twelve-point program of the American Medical Association for the improvement of health. He shows how this program in one point or another answers all the questions and criticisms offered by friend and foe alike. His are powerful arguments in favor of Freedom in Medicine and against compulsory health insurance.

The book is recommended reading for all doctors and their patients.

The Mask of Sanity: An Attempt to Clarify Some Issues About the So-called Psychopathic Personality. By Hervey Cleckley, M.D. Professor of Psychiatry and Neurology, University of Georgia Medical School, Augusta, Georgia. Second edition. Cloth. $6.50. Pp 569. The C. V. Mosby Company, St. Louis, 1950.

Many detailed case histories are presented in this revised and enlarged second edition of Cleckley's book about the psychopathic personality. The voids, vacuums, and hiatuses in our knowledge of the subject are outstanding. New knowledge is needed concerning the classification, diagnosis, and treatment of the disorder. New types of institutions are required for the care of these patients. New laws must be formulated to enable the courts and doctors to protect these patients, their relatives, and the public.

Although much knowledge is left to be desired, progress is being made, and this book, with its presentation of known facts, its discussion of future needs, and its philosophical approach to the problem, is outstandingly valuable.

The style of writing is designed for the non-medical reader as well as the doctor.

"The American Medical Association urges all its members to contribute individually to this cause, and we hope that doctors will take the lead in securing contributions from other sources.

"Furthermore, the American Medical Association invites attention to the fact that it has been spending about a quarter of a million dollars a year for many years past to advance medical education through its Council on Medical Education and Hospitals and other departments. This appropriation, voted today, for an entirely new purpose, is in addition to nearly $285,000 already budgeted for this work during 1951.

"The Nation's medical schools are of the greatest importance to every American citizen and the A.M.A. has had the advancement of their standards as one of its main objectives for over 100 years. The Board of Trustees feels that if all other organizations and individuals will render support of this worthy cause in accordance with their financial ability that not only will the financial security of medical schools be assured, but that their freedom will be protected."

PERSONAL NOTES

The Maricopa County Medical Society held election of officers at its December meeting. *Dr. Leslie Smith,* Phoenix, was elected President-Elect; and will follow previously elected *Dr. Dermont W. Melick,* Phoenix, who will be President in 1951. *Dr. A. James Fillmore,* Mesa, was elected vice-president, and *Dr. Robert H. Cummings,* Phoenix, was elected Secretary-Treasurer.

Atomic Bomb Indoctrination was presented by *Drs. Donald Polson,* Phoenix, *Mark Westervelt,* Tempe, and *Seymour Fisher, Phoenix,* for the scientific portion of the December Maricopa County Medical Society meeting held at Good Samaritan Hospital Phoenix, December 4th. An excellent movie on medical care of atomic bomb casualties was presented.

The Arizona Heart Association has announced that beginning in January 1951 a clinic will be held at the Good Samaritan Hospital, for heart consultations for those people who could not otherwise afford cardiac consultation. Details will be divulged later.

Officers for the staff of the St. Joseph's Hospital, Phoenix, for 1951 were elected at the December 11th meeting. President is *Dr. Robert H. Stevens,* Vice-president, *Dr. Robert T. Phillips,* and Secretary *Dr. Donald A. Polson,* all of Phoenix. *Drs. Joseph M. Greer, Robert H. Cummings,* and *Robert G. Barfoot,* Phoenix, were elected to the executive committee.

An interesting symposium on Congenital Deformities was presented at the December 11th St. Joseph's Hospital Staff meeting. *Dr. Howard C. Lawrence,* Phoenix, spoke on "Congenital Deformities of the Foot," and *Dr. George A. Williamson,* Phoenix, on "Congenital Deformities of the Upper Extremity."

One of the finest medical papers in recent years was presented by *Dr. Leslie B. Smith,* Phoenix, before the staff of the Good Samaritan Hospital, November 27, 1950. It was on the subject of "Pericardial Effusion."

Officers of the Good Samaritan Hospital Staff for 1951 were elected at this meeting on November 27th. *Dr. Reed Shupe* was elected Chief of Staff, *Dr. Leslie B. Smith,* Vice-president, and *Dr. Donald B. Haislip,* Secretary. All are of Phoenix.

Dr. James J. Riordan, Phoenix, attended the Golden Jubilee of the American Roentgen Ray Society, St. Louis, Missouri, September 26-29th, 1950.

Dr. Robert L. Taylor, Phoenix, has left his position with the Veterans Administration Hospital, as Chief of Surgery at their Papago Park Hospital Phoenix, and has associated himself with *Dr. Karl Harris,* Phoenix in the practice of General Surgery.

The following doctors from the Maricopa county Medical Society have joined the armed forces: *Dr. Perry W. Bailey,* Phoenix and *Dr. Martin J. Kripke,* Mesa—the army. *Dr. R. A. Gutekurst,* formerly of the State Tuberculosis Sanatorium at Tempe, the Navy.

The November meeting of the Maricopa County Medical Society Scientific Session was addressed by three speakers. *Mr. Bob Bale* spoke on "Office Personnel Training" *Dr. Seymour Fisher,* Manager of the Veterans Administration Hospital, Papago Park on "Present Policies of the Veterans Administration" and *Mr. Grady Clark,* of St. Paul, Minnesota on "The Doctor and his Money (If Any) and his Future."

In Houston, Texas, November 7-10, 1950, the American Society of Anesthesiologists met. *Dr.*

Maxwell Palmer, Tucson, *Drs. Audrey G. Urry, Wallace A. Reed* and *Geo. S. Enfield,* of Phoenix were in attendance. Donald Snodgrass was also present. It seems the California delegation to this meeting was not solely trying to monopolize the water of the universe. If the meaning of this is obscure ask any of the above in attendance for explicit details.

The November meeting of St. Monica's Hospital, Phoenix, Arizona was held November 14, 1950. *Drs. Howard C. Laurence,* and *John Ricker,* Phoenix, presented "Flap Repair of Lower Extremities," three case reports, and Dr. *James M. Ovens,* Phoenix spoke and showed pictures on "Parlaryngectomy Combined with Cervical Esophagectomy in Cancer of these Regions."

St. Joseph's Hospital Phoenix, held its monthly staff conference November 10th. *Dr. Joseph Ehrlich,* Phoenix, correctly diagnosed a Clinico-Pathologic Case as Perarteritis Nodosa. Further discussion of the case was given by *Drs. Leslie R. Kober* and *O. O. Williams,* Phoenix.

Dr. J. P. Ward, Phoenix, has been appointed director of the Welfare and Health Services, branch of Arizona's civilian defense program. October 23-27 in Washington, D. C. he attended the meeting of the association of State and Territorial Health Officers in his capacity of State Director of Public Health.

Dr. E. Payne Palmer, Sr., Phoenix, has been elected to the Board of Directors of the American College of Surgeons, at the Clinical Congress in Boston, Massachusetts.

Dr. Harry A. Cummings, Phoenix, attended the meeting of the American Academy of Dermatology and Syphilogy in Chicago, Illinois, December 2nd to the 7th.

SALINE SOLUTION IN TREATMENT OF BURN SHOCK*

The Surgery Study Section of the National Institutes of Health has recommended to the Surgeon General of the Public Health Service that the use of oral saline solutions be adopted as standard procedure in the treatment of shock due to burns and other injuries in the event of large-scale civilian catastrophe.

The recommendation followed action taken at the January 1950 meeting of the Surgery Study Section, when such treatment was approved in principle. Dr. Carl A. Moyer, a member of the Study Section, was designated at that time to prepare a memorandum suitable for submission to Dr. Norvin A. Kiefer, Director, Health Resources Division (now Health Resources Office), National Security Resources Board.

Dr. Moyer's memorandum, which was submitted to Dr. Kiefer, February 15, 1950, reads as follows:

"Since the publication of the experimental work of Dr. Rosenthal, Dr. Coller, et al., orally administered salt solutions have been employed in the treatment of burns at the University of Michigan Hospital, Ann Arbor, Mich.; at the Wayne County General Hospital, Eloise, Mich.; and at Parkland Hospital, Dallas, Tex. Personal clinical experience, in the above-named hospitals, has convinced me that the orally administered salt solutions are valuable adjunctive agents in the treatment of shock incident to burns, fractures, peritonitis, and acute anaphylactoid reactions. Certain factors are important in governing the effectiveness of the oral administration of salt solutions. They are as follows:

"1. The composition of the salt solution: The most palatable salt solution is made by dissolving 3 to 4 grams of sodium chloride and 2 to 3 grams of sodium citrate in each liter of water. If sodium citrate is not available, ordinary baking soda may be substituted for it.

"2. The concentration of salt should not be in excess of 140 milliequivalents of sodium per liter. If the concentration is above this, vomiting and diarrhea became important complicating factors.

"3. Whenever profound peripheral circulatory collapse is present, the intravenous route of administration must be used until peripheral blood flow has been reestablished. The salt solutions that we have found most satisfactory for this purpose are Hartmann's solution (Lactate-Ringer's solution) or plasma. In addition to the salt solution or plasma intravenously, whole blood is given concurrently whenever peripheral circulatory collapse exists. This materially implements the effectiveness of salt solutions.

"The slightly hypotonic salt solution is the only drinking fluid permitted the injured individual until the edema of the injured parts begins to subside. Certain exceptions to this rule have to be made during the hot weather of summer when it is sometimes necessary to permit the partaking of some non-salty water.

"As much as 10 liters of the hypotonic salt solution have been drunk in the 24-hour period by adults who have been severely burned. Since salt solution has been substituted for water, as a drinkable fluid, no burned person who has lived for longer than 3 hours after being admitted to the hospital has suffered from anuria. The "early toxemia phase" of the burns has also failed to appear and the osmotic concentration of the plasma electrolytes has been well maintained.

"We feel that much more clinical observation and actual experimental work should be undertaken regarding the effectiveness of the basic principles of the supportive therapy of burns that have been so beautifully demonstrated by Dr. Rosenthal. It is obvious that the adoption of a more active program of investigation into the relative effectiveness of simple measures to combat shock would be of extreme importance to the Armed Forces and to the civilian population in the event of another war."

Because of the sharpened national emergency that developed during the summer of 1950, the Surgery Study Section, in approving Dr. Moyer's memorandum at its meeting on September 16, changed the last paragraph to read:

"While further clinical research concerning the effectiveness of oral salt solution in the treatment of burns and other injuries is certainly in order, there is already sufficient evidence to suggest that this form of treatment should be used in any large-scale disaster involving the civilian population."

The Surgery Study Section letter to the Surgeon General, dated September 16, 1950, reads as follows:

*From the Office of the Surgeon General, Washington 25, D. C.

"It is my understanding that one of the functions of the Study Sections is to offer advice to the Surgeon General in fields of medicine lying within the special competence of the Study Section members. At the January 1950 meeting of the Surgery Study Section, there was considerable discussion concerning the use of oral saline solutions in the treatment of burns and other serious injuries. It was the consensus of the Section at that time that, on the basis of the animal work which had been done by Dr. Rosenthal of the National Institutes of Health, and the clinical work which had been done by Dr. Carl A. Moyer, by the undersigned, and by others, the efficacy of such treatment had been definitely demonstrated and that, while there is need to stimulate additional research in this field, our present knowledge is sound enough so that action can be taken on this basis. Dr. Moyer was designated to draft a short memorandum expressing our point of view on this subject. Such a memorandum was prepared and furnished to Dr. Norvin C. Kiefer, Director, Health Resources Division, National Security Resources Board, on February 15, 1950. A copy of Dr. Moyer's memorandum is attached.

"In view of the more acute national emergency that has developed since Dr. Moyer wrote this memorandum, the Study Section, at its meeting on September 16, 1950, voted to recommend that the principles of treatment outlined in his memorandum be adopted for widespread use in any large-scale disaster involving the civilian population. Because of the present emergency situation, we have modified the last paragraph of Dr. Moyer's memorandum to read, 'While further clinical research concerning the effectiveness of oral salt solution in the treatment of burns and other injuries is certainly in order, there is already sufficient evidence to suggest that this form of treatment should be used in any large-scale disaster involving the civilian population.'

"You are at liberty to transmit this recommendation of the Surgery Study Section to the National Security Resources Board or to other proper agencies, and, if you see fit, to publish it. We feel strongly that it is important for the medical profession of the country and for those planning for the handling of potential disasters to be informed of the value of this simple and easily carried out form of treatment."

The letter was signed by Frederick A. Coller, M.D., University of Michigan, Chairman of the Surgery Study Section. Members of the study section in addition to Dr. Coller, are: Dr. Claude S. Beck, professor of neuro-surgery, Western Reserve University; Dr. Loren R. Chandler, dean, Stanford University Medical School; Dr. Lester R. Dragstedt, professor of surgery, University of Chicago; Dr. Daniel C. Elkin, professor of surgery, Emory University; Dr. Carl A. Moyer, dean and professor of surgery, Southwestern Medical School, University of Texas: Dr. Harris B. Shumacker, Jr., professor of surgery, Indiana University Medical Center; Dr. Owen H. Wangensteen, professor of surgery, University of Minnesota; Dr. Allen O. Whipple, clinical director, Memorial Hospital, New York City; Dr. H. L. Skinner, chief of surgery, Staten Island Marine Hospital; Dr. Henry Beecher, professor of anesthesiology, Harvard University Medical School; Dr. J. Gordon Lee, chief of surgery, Mount Alto Hospital, Washington, D. C.; Dr. Howard R. Lawrence, chief of surgery, Francis E. Warren, Air Force Base Hospital, Wyoming; and Dr. G. Halsey Hunt, Chief, Division of Hospitals, Public Health Service.

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*This does not represent a complete bibliography.

WOMAN'S AUXILIARY

1950 CONFERENCE REPORT

The report of Mrs. Royal W. Rudolph, President-elect, Woman's Auxiliary to the Arizona Medical Society, on the seventh annual conference of State Presidents and Presidents-elect, and National Chairmen of Standing Committees, at Hotel La Salle, Chicago, Illinois, November 2nd and 3rd.

Mrs. Arthur A. Herold, National President, graciously opened the conference with words of welcome and introduced the President-elect and Conference Chairman, Mrs. Harold F. Wahlquist. She, in turn, gave a plan of the meetings, presenting the overall theme, " Public Service Through Health Education"; the individual theme, "I Will Be Progressive."

Members of the National Board worked diligently to prepare for the conference and year's work. To give as much information as possible in two days, the "panel system" was used and it proved very successful. State presidents, assigned to the various standing committee panels, gave three-minute reports with the National Chairman acting as moderator of each committee. Speakers gave valuable and authortative information in their specialized field. In order to pass on a vast amount of information, I have taken the liberty of condensing it into the following outline.

Organization—Mrs. Leo J. Schaefer, Chairman

"By your works ye shall be known"

1. Increase membership, unify efforts and stand ready to serve your community.
2. Invite new Auxiliaries to organize wherever county societies exist, no matter how few their members.
3. Enroll members-at-large. Whether an Auxiliary is or is not organized in a county, the individual doctor's wife is a key person in her community. She is urged to become a member-at-large in order to receive all benefits to pass on to her local organizations.
4. Retain members by planning active and constructive programs.

Program—Mrs. Harry F. Pohlmann, Chairman

"Flexibility necessary today"

I. Program within the Auxiliary

1. School of instruction for state and county officers and committee chairmen. Summarize for county meetings.
2. Active public relations and alert legislative committees.
3. Welfare project.
4. Speakers' bureau.
5. Social gathering of doctors and wives.

II. Program outside the Auxiliary.

1. Health essay contest and debates in schools.
2. Educational movies and radio script programs.
3. A booth at county fair.
4. Rural health plans; Kansas has adopted a plan which has improved the distribution of doctors.

Public Relations—Mrs. Theodore E. Heinz, Chairman

"Live public relations"

I. Personal Education

1. County and state meetings.
2. Medical journals, Woman's Auxiliary *Bulletin, Arizona Medicine, Today's Health,* current magazines and newspapers.
3. Guidance and approval of your public relations activities from the Doctors' Advisory Council.

II. The Approach

1. Infiltrate various organizations, especially health agencies.
2. Establish friends in organizations and serve as liaison between the medical profession and lay people.

III. Activity Suggestions—Do you know 10,206 organizations have taken a stand against Compulsory Health Insurance?

1. Encourage women's clubs, such as A.A.U.W., League of Women Voters, P.T.A., P.E.O., and church groups to include the study of health plans on their agenda.
2. Work for endorsements. People are willing to take a stand when they understand the issue, but pushing causes antagonism. Endorsements should be urged only after there has been a program of orientation within the organization.

3. Recruit nurses. Many states are sponsoring the Nurses' Loan Fund. There is a need for nurses. We should recognize good nursing service and help them to maintain high standards. An annual tea for high school students, including freshmen, interested in the profession, has proved successful. Graduate nurses should be invited to speak on preparatory courses and explain the great service the nursing profession lends to humanity.
4. Explain and distribute literature on Compulsory and Voluntary Health Plans. Material is obtainable from county chairmen or from Miss Margaret Wolfe, 535 North Dearborn Street, Chicago.

Today's Health—"Most authentic health magazine"

I. Mr. Frank Cargill, Circulating Manager
1. *Today's Health*, published by an altruistic group; a medium of health education.
2. A magazine not for entertainment, but for instruction.
3. Not a newstand seller, but to be sold through personal approach.
4. The larger the circulation, the better the magazine.

II. Dr. W. W. Bauer, Publisher
1. Appeal increased by change of name and cover.
2. More money being paid to contributors.
3. More articles written by nationally known people.
4. Increased subscriptions due to variety of subjects of interest to all ages.
5. Desire of staff for suggestions or constructive criticism.

III. Mrs. W. Kelso, Chairman.
1. Review an article at the county meetings.
2. Urge doctors to subscribe 100%.
3. Approach dentists, lawyers or other professional people.
4. Sell or give subscriptions to the high schools and libraries.
5. Be a subscriber yourself.

Legislation

I. Mrs. Edgar E. Quayle, Chairman
1. Discussing of pending bills by chairmen at the meetings has proved profitable.
2. With approval of the Doctors' Advisory Committee, state and county chairmen are urged to invite a well-qualified person to speak on legislative measures at the county meetings.
3. At the suggestion of the chairman, personal letters should be written to legislators by members and also by non-medical people.

II. Mrs. Arthur A. Herold, National President, announced that the following resolution passed by the Auxiliary House of Delegates in San Francisco has been approved by the Doctors' Advisory Committee:

"Whereas, It is evident that existent trends toward socialism is governmental affairs call for a return to the fundamentals upon which this democracy was founded; and

Whereas, It has been brought to our attention that not all of the states in the Union require the study of American history from the first grade through the colleges; and

Whereas, Knowledge of the pledge of allegiance to the flag, the Declaration of Independence, and the Constitution of these United States creates in youth an awareness of our heritage of freedom; therefore be it

Resolved by the Woman's Auxiliary to the American Medical Association that our Advisory Council be petitioned to request that state auxiliaries stress within their respective communities the inclusion of the aforementioned subjects in school curricula."

III. American nurses should know these facts about nurses in Great Britain:

"In November, 1941—five years *before* complete Nationalization of the health services—a Nurses' Salaries Committee with Lord Rushcliffe as chairman was set up. This committee consisting of two panels of equal numbers, one representing nurses, the other the employing authorities, made a survey. The Rushcliffe Committee made recommendations for increases in pay, a working period of a 96 hour fortnight and other badly needed improvements in the nursing field. By voluntary agreement these benefits went into effect throughout Great Britain generally in April, 1943.

To British nurses this improvement in their status represented a tremendous professional advance. And that step forward was accomplished by cooperation between the medical and nursing professions and lay people; *it was not the result of the National Health Service Act or any Governmental decree.*"

Dr. John Cline, President-elect, A.M.A.

"Don't be lulled into a state of stopping your work; effort of Auxiliary women has proved potent."

Dr. Ernest B. Howard, Assistant Secretary A.M.A. and liaison between A.M.A. and Auxiliary

I. American College of Surgeons plan to continue the Hospitalization Standardization Program.

II. A.M.A. studies and works constantly on legislation, health programs and draft act, informing doctors of progress.

III. Auxiliary must keep informed; the next two years will be a crucial time in the fight against socialized medicine.

Dr. George M. Lyon, Special Assistant of Atomic Medicine and Chief Radio Isotope Section, Veterans Administration, Washington, D. C.

I. Atomic Bomb. Oceans are no longer a barrier; in war, our cities will be targets with no complete defense.
   1. Greatest danger results from fire.
   2. Suffering and panic can be minimized.

II. State Direction Civil Defense Program. Doctors' Advisory Committee is meeting a great challenge, initiating plans in the orientation of program.
   1. To educate the individual to educate himself.
   2. To prepare and plan with committees.

III. Auxiliary Responsibility.
   1. Incorporate a study of civil defense into program.
   2. Stimulate other groups to study plans through lay group.
   3. Understand and interpret individual preparedness to communities.

IV. Suggested Reading
   1. *How to Survive an Atomic Bomb,* by Dr. Richard Gerstell—25 cents. Bantam, Inc., 25 W. 45th St., New York City.
   2. *U. S. Civil Defense*—25 cents. U. S. Printing Office, Washington, D. C.
   3. *Survival Under Atomic Attack*—10 cents. U. S. Printing Office, Washington, D. C.

Dr. Thomas G. Hull, Director, Bureau of Exhibits A.M.A.

"Health Education is an abstract subject; concrete by exhibits."

I. Exposition type for outdoors.

II. Table exhibits for county fair.

III. Museum exhibits for those in receptive mind.

Mr. Ralph Greer, Bureau of Motion Pictures A.M.A.

I. Local Procurement
   1. State Health Department
   2. U. of A.
   3. Cancer Society
   4. T. B. Association

II. A.M.A. Procurement. A limited number of scientific films are available for lay groups. The A.M.A. advises that a doctor should be present to discuss the films and that a question and answer period follow the showing.

III. Film Council of America, 57 E. Jackson Blvd., Chicago

IV. Television

A.M.A. is making survey to clear films.

Whitaker and Baxter, Directors National Education Campaign.

Doctors are fighting for the health of the nation; they need the cooperation of every Auxiliary member. The medical profession is not fighting for personal gain today; it is fighting to preserve medical ideals in the future. America is a great country because the people have been unafraid; because of their love of freedom, they have made individual effort. Let us continue. Group endorsement is the result of individual endorsement. "Remember the powerful man in America today is the man next door."

In concluding this report I wish to say that I feel privileged to have been chosen to attend this splendid conference. The continuous working session gave everyone a gratifying sense of accomplishment. From the luncheons and regional breakfast, so thoughtfully planned, came the opportunity for a most rewarding exchange of ideas. And now, to you, let me repeat Mrs. Herold's last message, "Let us double our interest, triple our membership and quadruple our confidence."

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SANATORIUM DIRECTORY

SANATORIUM DIRECTORY—(Cont'd.)

SANATORIUM DIRECTORY—(Cont'd.)

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DRUGGISTS' DIRECTORY

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